**Reed Park Improvements Project**

**Addendum #4**
Issue Date: October 16th, 2023
Bids Due: October 20th, 2023
Time: 1:30 PM
Location: Civic Center
325 E. Aspen Ave.
Fruita, CO 81521

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The following shall modify the bid documents and become a part of the overall bid documents package:

- The bid opening date will remain Friday October 20th, 2023, at 1:30 in the City of Fruita Civic Center at 325 E. Aspen Avenue.
- Replace the previous skate park drawings (SP- series sheets) with the drawing included in this addendum.
- Replace the Bid Schedule with the Bid Schedule included herein. Make sure to acknowledge all addenda.
- Replace the south shelter and restroom drawings with those attached.
- Add the north shelter structural drawings, attached.

The following questions were submitted with answers provided:

Q: Can the question deadline be delayed?
A: No, the question deadline is past.

Q: Is the project tax exempt?
A: Yes, the tax-exempt documentation will be provided to the successful bidder.

Q: Are there wage requirements?
A: The city does not have any additional requirements than what state and federal law require.

Q: Is there a budget/engineer's estimate?
A: The total budget for this project is $1.55 million. This has been a very important project for the City so the budget may not reflect what the City is prepared to spend to complete this project.

Q: If the bids are over the budget, will the project be awarded?

A: If the bids are over the project budget the City Council will evaluate the bids and decide on whether to take the money out of fund balance or construct a reduced version of the currently proposed project.

Q: Do we want All-Wheel park pricing to reflect summer or winter concrete conditions?
A: Bid the project as though concrete blankets or other means of protection are not required.

Q: What is the bid bond end of completion date?
A: The bid bond is there to guarantee your bid. The payment/performance bond ends at final completion and turns into a one-year warranty bond per our standard contract.

Q: Does the bid bond include the wheel park?
A: All bonds should include the entire project, including the wheel park.

Q: Can we distribute the prebid attendance list?
A: Yes, it has been uploaded to the project website at:
https://www.fruita.org/publicworks/page/reed-park-improvements-project

Q: Will permitting be by the GC, City of Fruita, or exempt?
A: All permitting, including stormwater, building permits, Xcel, Ute, etc. permitting are the responsibility of the contractor to obtain, maintain and close out.

Q: Can you distribute the list of prequalified skate park people?
A: Yes. The following is a list of accepted skate park contractors but does not limit the list to others that may qualify.
Newline skateparks - Everett@newlineskateparks.com

Evergreen skateparks - evergreenskateparks@gmail.com

Tim Payne
Owner - Team Pain Skate Parks
O - (406) 366-9221
C - (321) 277-8185
Tim@teampain.com

Matt Fluegge Chief Executive Officer GRINDLINE SKATEPARKS, INC.
O 206.932.6414
C 206.612.3401
matt@grindline.com

Dalton Vaughn
Action Sports Development Specialist
American Ramp Company
dvaughn@americanrampcompany.com

O - 417-206-6816 x 151
C - 918-949-8413
americanrampcompany.com

Q: Where is the new fire hydrant?
A: There is no new fire hydrant.

Q: Skate park sheet SP1.08 is not included. Please provide that.
A: A new set of skate park drawings is included in this addendum.

Q: Can we abandon some irrigation in-place or should it be entirely removed?
A: You may abandon anything in place that is underground. If there are any valves to be abandoned, they are to be removed and the pipe should be cut and capped.

Q: Has there been an asbestos test on the existing bathroom?
A: No asbestos testing has been performed. Assume testing is a part of the demolition and if asbestos is found, a change order will be negotiated to properly dispose of it.

Q: Have the Xcel abandonment permits been started yet?
A: No, consider that incidental to the construction.

Q: Based on the time delay between the skate park construction and the playground drain system, how will drainage be handled in the interim?
A: The main line drain and pump station will be installed now regardless of the timing of the skate park. Individual drains will need to be installed and protected so there is no standing water. Grates can be omitted if there is a delay but are still considered part of the bid.

Q: Will retainage be handled as one project or can we split it into phase 1 (shelter, flat work) and phase 2 (skate park)?
A: Due to the potential timing issues, the skate park and the remainder of the project will have separate substantial and final completion dates and retainage will be separated between the two and will be based on the time of substantial completion individually.

Q: Will temporary fencing be required around the skate park area if its construction is delayed?
A: No. If the City deems the area unsafe upon rough grading, the City will provide safety fencing at its cost.

Q: Will the City help in locating the existing irrigation system?
A: Yes, to the best of our records and knowledge.

Q: Is the GC expected to provide stamped irrigation design drawings?
A: No, a landscaper/irrigation system installer should have the background to make any modifications to the system.

Q: Can the City provide more info on northern shelter, including what the scope of work is?
A: Plans provided in addendum, slab to be 4" thick with 6" turn-down edges, broom finish and saw-cut joint patter to match existing southern shelter. Contractor to construct foundation (slab and footers), electric from pumphouse panel to structure, delivery of shelter parts from PW shop to site, assembly of structure.

Q: Electric at northern shelter?
A: Electric to be run from existing panel at pumphouse. 2-20 amp circuits to be run with 2 separate duplex receptacles. LED lighting to be on one of the 2 circuits. Conduit to be run up through 2 of the columns.

Q: Can you provide a more detailed specification for the trash bins?
A: The City is hereby changing the trash bin type to the following:

Belson Outdoors 32 Gallon Steel Trash Receptacle – Diamond Pattern
Model EX-32
Rain-Bonnet Lid, 14" Opening
PL32 32 Gallon Liner
Surface Mount Kit
Cable Attachment for Receptacle Lid

Q: Please confirm quantity of Type A and Type B boulders.
A: Per the current bid schedule – 8 Type A, 10 Type B

Q: Confirm the quantity of Buffalo Dure-Turf Plus. There is conflicting info (8372 sf on the bid schedule, 8110 on the plans).
A: The bid form quantity is correct.

Q: Please confirm the number of bike racks – is it 1 (per the bid schedule) or 5 (per the plans)?
A: The bike rack shown on the plans includes a slab, etc., not just the hoops. The quantity should be 1.

Q: Can we switch the asphalt mix to Fruita spec?
A: Yes, PG64-22

The Contractor shall acknowledge receipt of this, and any future Addenda on the Bid Schedule to be considered a responsive bid.

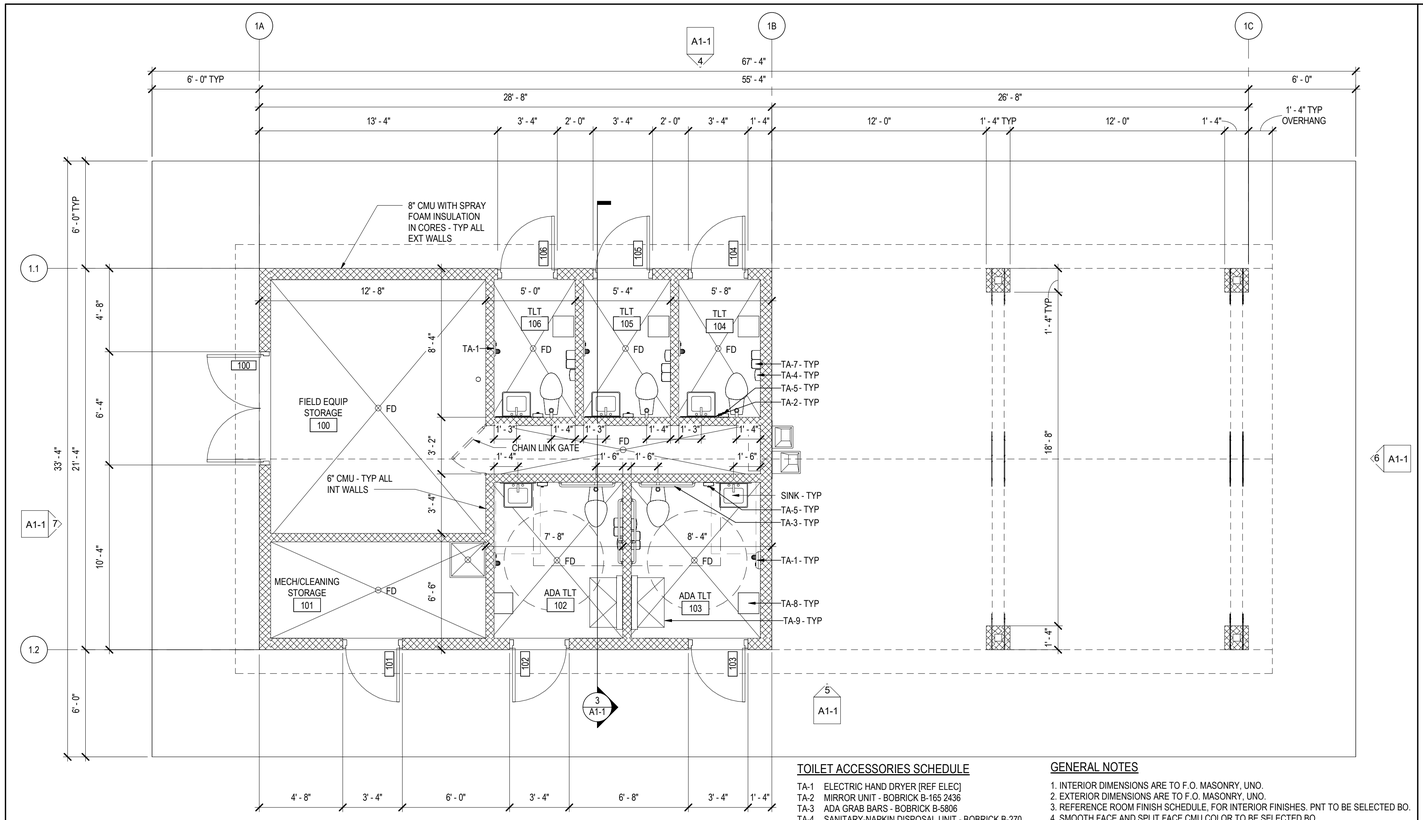
**City of Fruita**
**Bid Schedule - Addenda 1-4**
**Reed Park Improvements Project**

| No. | Refrenced Spec. Section | Item | Unit | Quantity | Unit Cost | Extension |
|---|---|---|---|---|---|---|
| 1 | Special Prov. | Mobilization & Demobilization | LS | 1 | | |
| 2 | Special Prov. | Construction Surveying | LS | 1 | | |
| 3 | Special Prov. | Material Testing | LS | 1 | | |
| 4 | 312270 | Temp. Erosion and Sedimentation Control/Stormwater Mgmt. | LS | 1 | | |
| 5 | Special Prov. | Traffic Control | LS | 1 | | |
| 6 | 311000 | Site Clearing | LS | 1 | | |
| 7 | 312000 | Earth Moving | LS | 1 | | |
| 8 | Special Prov. | Remove/Dispose of Existing Asphalt (Full-Depth) | SY | 70 | | |
| 9 | Special Prov. | Remove/Dispose of Existing Concrete (Includes Wall) | SF | 7000 | | |
| 9A | Special Prov. | Remove/Dispose of Existing Concrete (Add Alternate) | SF | 900 | | |
| 10 | Special Prov. | Remove/Dispose of Existing Planting Area | SF | 17000 | | |
| 10A | Special Prov. | Remove/Dispose of Existing Planting Area (Add Alternate) | SF | 7100 | | |
| 11 | Special Prov. | Remove/Dipose of Existing Tree | Each | 8 | | |
| 11A | Special Prov. | Remove/Dipose of Existing Tree (Add Alternate) | Each | 3 | | |
| 12 | Special Prov. | Remove/Dispose of Existing Bathroom Facility/Foundation | LS | 1 | | |
| 13 | Special Prov. | Remove/Dispose of Existing Playground Equipment | LS | 1 | | |
| 14 | Special Prov. | Remove/Salvage Merry-Go-Round | LS | 1 | | |
| 15 | Special Prov. | Remove/Dispose of Existing Playground Mulch | LS | 1 | | |
| 16 | Special Prov. | Cap/Remove/Abandon Existing Gas Service | LS | 1 | | |
| 17 | Special Prov. | Cap/Remove/Abandon Existing Water Tap/Line/Meter | LS | 1 | | |
| 18 | Special Prov. | Cap/Remove/Abandon Existing Sewer Service Line | LS | 1 | | |
| 19 | Special Prov. | Remove/Dispose of Existing Horseshoe Pits | LS | 1 | | |
| 20 | Special Prov. | Remove/Fill Existing Drain Sump | LS | 1 | | |
| 21 | Special Prov. | Remove/Dispose of Existing Water Fountain | LS | 1 | | |
| 22 | Special Prov. | Remove/Dispose of Existing Chain Link Fence | LF | 130 | | |
| 23 | 329300 | Catalpa speciosa (Western Catalpa) | Each | 4 | | |
| 23A | 329300 | Catalpa speciosa (Western Catalpa) (Add Alternate) | Each | 1 | | |
| 24 | 329300 | Morus alba 'fruitless' (Fruitless Mulberry) | Each | 4 | | |
| 25 | 329300 | Comus sericea (Red Twig Dogwood) | Each | 73 | | |
| 26 | 329300 | Boeteloua gracilis (Blue Grama) | Each | 616 | | |
| 26A | 329300 | Boeteloua gracilis (Blue Grama) (Add Alternate) | Each | 376 | | |
| 27 | 329300 | Nepeta 'Little Trudy' (Catmint 'Little Trudy') | Each | 80 | | |
| 28 | 329300 | Perovskia atriplicifolia (Russian Sage) | Each | 233 | | |
| 28A | 329300 | Perovskia atriplicifolia (Russian Sage) (Add Alternate) | Each | 68 | | |
| 29 | 329200 | Buffalo Brand Dura- Turf Plus | SF | 8372 | | |
| 30 | 015639 | Temporary Tree and Plant Protection | LS | 1 | | |
| 30A | 015639 | Temporary Tree and Plant Protection (Add Alternate) | LS | 1 | | |
| 31 | 044400 | Boulder Type A | Each | 8 | | |
| 32 | 044400 | Boulder Type B | Each | 10 | | |
| 33 | 116800 | Horseshoe Pit | Each | 7 | | |
| 34 | 321313/Special Provisions | Pedestrian Cast-in-Place Concrete Paving | SF | 6800 | | |
| 34A | 321313/Special Provisions | Pedestrian Cast-in-Place Concrete Paving (Add Alternate) | SF | 5450 | | |
| 35 | 321313/Special Provisions | Vehicular Cast-in-place Concrete Paving | SF | 1000 | | |
| 35A | 321313/Special Provisions | Vehicular Cast-in-place Concrete Paving (Add Alternate) | SF | 360 | | |
| 36 | CDOT M-608-1 | Vehicular Ramp | Each | 1 | | |
| 37 | CDOT M-608-1 | Pedestrian Ramp | Each | 1 | | |
| 38 | Special Prov. | Drain Pan | LF | 110 | | |
| 39 | Special Prov. | Curb & Gutter | LF | 155 | | |

**City of Fruita**
**Bid Schedule - Addenda 1-4**
**Reed Park Improvements Project**

| No. | Refrenced Spec. Section | Item | Unit | Quantity | Unit Cost | Extension |
|---|---|---|---|---|---|---|
| 40 | Special Prov. | Sidewalk Chase | Each | 2 | | |
| 41 | Special Prov. | Park Electrical System | LS | 1 | | |
| 42 | 265600 | Light Type 1 | Each | 3 | | |
| 43 | 323300 | Bench Type 1 | Each | 6 | | |
| 43A | 323301 | Bench Type 1 (Add Alternate) | | 4 | | |
| 44 | 323300 | Picnic Table Type 1 | Each | 4 | | |
| 45 | 323300 | Bike Rack | Each | 1 | | |
| 46 | Special Prov. | Trash Bin | Each | 1 | | |
| 47 | 323119 | Decorate Metal Fence | LF | 150 | | |
| 48 | 321216/Special Provisions | Asphalt Pavement | SY | 200 | | |
| 49 | 321540 | Crushed Stone Surfacing | SF | 5000 | | |
| 50 | 321363 | Painted Pavement Markings | LF | 850 | | |
| 51 | 321363 | Thermoplastic Pavement Markings | Each | 4 | | |
| 52 | 328433 | Irrigation-Design/Build | LS | 1 | | |
| 52A | 328433 | Irrigation-Design/Build (Add Alternate) | LS | 1 | | |
| 53 | 334600 | 4'' Perforated HDPE Playground Underdrain pipe | LF | 132 | | |
| 54 | 334600 | 6'' Perforated PVC Underdrain Pipe | LF | 60 | | |
| 55 | 334100 | 6'' PVC Storm Sewer Pipe | LF | 366 | | |
| 56 | 333113 | 4'' SDR-35 PVC Sanitary Sewer Service Pipe | LF | 55 | | |
| 57 | 333113 | 4" Sanitary Sewer Cleanouts | Each | 2 | | |
| 58 | 334100 | 4" Storm Drain Cleanouts | Each | 9 | | |
| 59 | 334100 | 6" Storm Drain Cleanouts | Each | 5 | | |
| 60 | 334100 | Storm Drain Inlets | Each | 9 | | |
| 61 | 221113 | 1-1/2'' Copper Water Service | LF | 145 | | |
| 62 | Construction Plans Sheets C4-00 Through C4-03 | Stormwater Pump System | LS | 1 | | |
| 63 | S. Shelter Drawings (Blythe Sheets) | Shelter/Restroom (Complete in Place) | LS | 1 | | |
| 64 | Special Prov. | Northern Shelter (Install Only) | LS | 1 | | |
| 65 | S/W Park Drawings/Specs. | Skate/Wheel Park (Complete in Place) | LS | 1 | | |
| 66 | Special Prov. | Contingency/Force Account | LS | 1 | $ 200,000.00 | $ 200,000.00 |
| | | | | | Total Base Bid Amount: | |

Company Name: _____
By: _____
Signature: _____
Date: _____
Addenda 1-4 Acknowledgment (Initial): _____



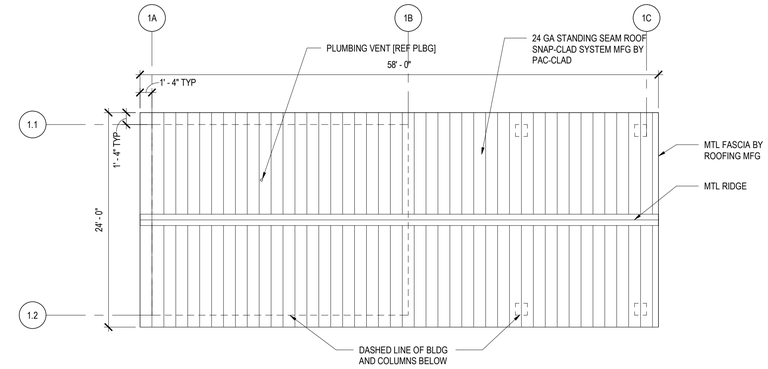

## 1 FLOOR PLAN
A1-1 — 1/4" = 1'-0"

### TOILET ACCESSORIES SCHEDULE

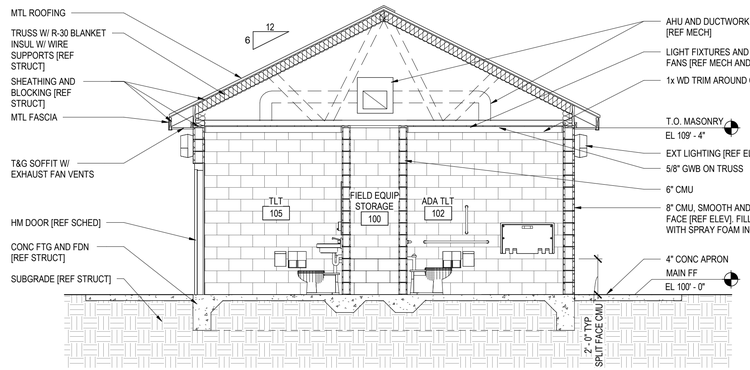
TA-1 ELECTRIC HAND DRYER [REF ELEC]
TA-2 MIRROR UNIT - BOBRICK B-165 2436
TA-3 ADA GRAB BARS - BOBRICK B-5806
TA-4 SANITARY-NAPKIN DISPOSAL UNIT - BOBRICK B-270
TA-5 SOAP DISPENSER - BOBRICK B-4112
TA-6 NOT USED
TA-7 TOILET TISSUE DISPENSER - BOBRICK B-4288
TA-8 WASTE RECEPTACLE - FBO
TA-9 BABY CHANGING STATION - KOALA KARE KB300-SS

### GENERAL NOTES

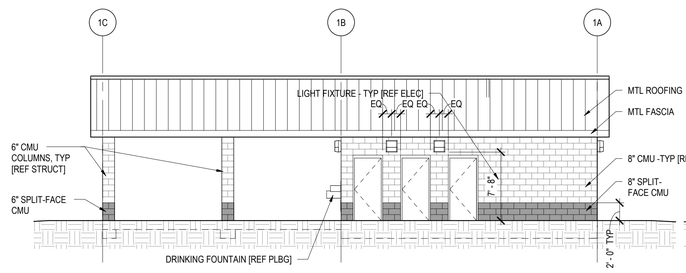
1. INTERIOR DIMENSIONS ARE TO F.O. MASONRY, UNO.
2. EXTERIOR DIMENSIONS ARE TO F.O. MASONRY, UNO.
3. REFERENCE ROOM FINISH SCHEDULE, FOR INTERIOR FINISHES. PNT TO BE SELECTED BO.
4. SMOOTH FACE AND SPLIT FACE CMU COLOR TO BE SELECTED BO.
5. T.O. MASONRY 9'-4" TYP [REF STRUCT]
6. ALL EXT MTL PRODUCTS TO MATCH IN COLOR.
7. INSUL FRAMED GABLES W/ R-19 BLANKET INSUL.
8. INSTALL STAINLESS STEEL BIRD REPELLENT BIRD SPIKES. SIM TO BIRD-X (STS) ON ALL EXPOSED GL TRUSSES.



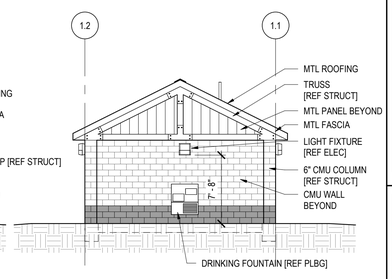

## 2 ROOF PLAN
A1-1 — 1/8" = 1'-0"



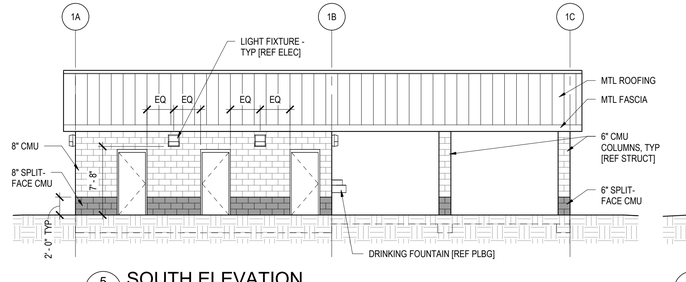

## 3 BUILDING SECTION
A1-1 — 1/4" = 1'-0"



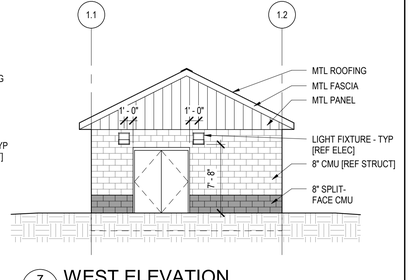

## 4 NORTH ELEVATION
A1-1 — 1/8" = 1'-0"




## 6 EAST ELEVATION
A1-1 — 1/8" = 1'-0"




## 5 SOUTH ELEVATION
A1-1 — 1/8" = 1'-0"




## 7 WEST ELEVATION
A1-1 — 1/8" = 1'-0"

### ROOM FINISH SCHEDULE

| ROOM | | FLOOR | | WALLS | | | | CEILING | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | NAME | FINISH | BASE | NORTH | EAST | SOUTH | WEST | MATERIAL | FINISH | CEILING HEIGHT |
| 100 | FIELD EQUIP STORAGE | SC | -- | -- | -- | -- | -- | -- | -- | EXP |
| 101 | MECH/CLEANING STORAGE | SC | -- | -- | -- | -- | -- | -- | -- | EXP |
| 102 | ADA TLT | SC | -- | PNT-1 | PNT-1 | PNT-1 | PNT-1 | GWB | PNT-2 | 9'-5" |
| 103 | ADA TLT | SC | -- | PNT-1 | PNT-1 | PNT-1 | PNT-1 | GWB | PNT-2 | 9'-5" |
| 104 | TLT | SC | -- | PNT-1 | PNT-1 | PNT-1 | PNT-1 | GWB | PNT-2 | 9'-5" |
| 105 | TLT | SC | -- | PNT-1 | PNT-1 | PNT-1 | PNT-1 | GWB | PNT-2 | 9'-5" |
| 106 | TLT | SC | -- | PNT-1 | PNT-1 | PNT-1 | PNT-1 | GWB | PNT-2 | 9'-5" |

### DOOR SCHEDULE

| DOOR NUMBER | DOOR SIZE | | DOOR TYPE | | FRAME TYPE | | COMMENTS |
|---|---|---|---|---|---|---|---|
| | WIDTH | HEIGHT | MATL | FINISH | MATL | FINISH | |
| 100 | 6' - 0" | 7' - 0" | HM | PNT | HM | PNT | storeroom function with head and foot bolts |
| 101 | 3' - 0" | 7' - 0" | HM | PNT | HM | PNT | storeroom function with deadbolt |
| 102 | 3' - 0" | 7' - 0" | HM | PNT | HM | PNT | privacy function with deadbolt |
| 103 | 3' - 0" | 7' - 0" | HM | PNT | HM | PNT | privacy function with deadbolt |
| 104 | 3' - 0" | 7' - 0" | HM | PNT | HM | PNT | privacy function with deadbolt |
| 105 | 3' - 0" | 7' - 0" | HM | PNT | HM | PNT | privacy function with deadbolt |
| 106 | 3' - 0" | 7' - 0" | HM | PNT | HM | PNT | privacy function with deadbolt |

HOLLOW METAL DOORS PRODUCT INFORMATION
1. Door Finish: Factory primed and field finished.
2. Exterior Doors: Thermally insulated.
   A. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 2 - Heavy-duty.
      b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
      c. Model 1 - Full Flush.
      d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
      e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
   B. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
      a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
   C. Door Thermal Resistance: R-Value of 2.5.
   D. Door Thickness: 1-3/4 inches, nominal.

HOLLOW METAL FRAMES PRODUCT INFORMATION
1. A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
   A. Frame Finish: Factory primed and field finished.
      a. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
2. Exterior Door Frames: Face welded type
   A. Dimensions: 2" jamb and 4" head.
   B. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
   C. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
   D. Weatherstripping: Separate, see Section 08 71 00.
   E. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.
3. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PAINT SYSTEM AND PRODUCT INFORMATION
Two top coats and one coat primer.
1. Top Coat(s): High Performance Architectural Interior Latex; MPI #139. Color to be selected by owner.
   A. Products:
      a. Sherwin-Williams Pre-Catalyzed Waterbased Epoxy, Eg-Shel. (MPI #139)
         • For use on walls.
      b. Sherwin-Williams ProMar 200 HP Series, Eg-Shel. (MPI #139)
         • For use on ceilings
2. Primer: As recommended by top coat manufacturer for specific substrate.

FLOOR FINISH PRODUCT INFORMATION
Penetrating Liquid Floor Treatment
1. Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.
   A. Products:
      a. Dayton Superior Corporation; Day-Chem Sure Hard.
      b. Meadows, W. R., Inc.; Liqui-Hard.
      c. Metalcrete Industries; Floorsaver.
      d. Vexcon Chemicals, Inc.; Vexcon StarSeal PS.

HARDWARE PRODUCT INFORMATION
1. Design and performance criteria
   A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
   B. Provide individual items of single type, of same model, and by same manufacturer.
      a. Provide door hardware products that comply with the all applicable provisions of federal, state, and local codes, ICC A117.1 accessibilty codes, and BHMA A156.115 Hardware Preparation for Steel Doors and Steel Frames.
   C. Lock Function: Provide function listed in the door schedule.
   D. Fasteners:
      a. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
      b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
      c. Provide machine screws for attachment to reinforced hollow metal frames.
      d. Aluminum or self-drilling (Tek) type fasteners are not permitted.
2. HINGES
   A. Hinges: Comply with BHMA A156.1, Grade 1 and BHMA A156.7 for templated hinges.
      a. Provide hinge with required to clear surrounding trim.
      b. Provide 3, five-knuckle, full mortise, ball-bearing, butt hinges with non-removable pins.
3. CYLINDRICAL LOCKS
   A. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
      a. Provide 2-1/8 inch diameter, 2-3/4 inch backset, 1/2 inch throw, with lever handle on inside and outside of each door.
      b. Provide manufacturer's standard strike box, strike plate with curved lip finished to match lockset.
   B. Manufacturers:
      a. Sargent 10 line.
      b. Best 9K.
4. AUXILIARY LOCKS (DEADLOCKS)
   A. Auxiliary Locks (Deadlocks): Comply with BHMA A156.36, Grade 1.
      a. Provide bored (cylindrical), 2-3/4 inch backset, 1/2 inch throw with latch made of hardened steel.
      b. Provide strike that matches frame.
   B. Manufacturers:
      a. Sargent 480 Series.
      b. Best T Series.
5. CLOSERS
   A. Provide BHMA A156.4, Grade 1 surface mounted closers installed on the interior side of exterior doors. Finish to be selected by owner from manufacturer's standard colors.
   B. Manufacturers:
      a. Sargent 1431 Series.
      b. Best HD8000.
6. THRESHOLDS
   A. Pemko model 253, aluminum threshold. Field cut the threshold to profile of frame for a tight fit. Install with non-corroding fasteners at exterior locations.
7. WEATHERSTRIPPING AND GASKETING
   A. Provide BHMA A156.22 weatherstripping and gasketing.
      a. Gasketing: Pemko 290PK Mill Finish Aluminum with Gray Pemko Prene insert.
      b. Door Sweep: Pemko 18061CNB Clear Anodized Aluminum with Gray Nylon Brush insert.
8. FINISHES
   A. Provide door hardware with 626; satin chromium plated over nickel, with brass or bronze base material BHMA A156.18 finish. All hardware is to be of the same finish except as noted below.


BG+ co.
Architecture
Interior Design
Project Management
622 Rood Avenue
Grand Junction, CO 81501
970-242-1058 office
BLYTHE GROUP + co.


REED PARK RESTROOM & BUILDING FACILITIES

250 SOUTH ELM STREET
FRUITA , CO

FLOOR PLAN, ROOF PLAN, SECTION, ELEVATIONS AND SCHEDULES

FOR CONSTRUCTION

| REV. | DESC. | DATE: |
|---|---|---|
| 1 | ADDENDUM #1 | 10/12/23 |

DATE: 09/15/2023

PROJECT #: 23038

SHEET #:

A1-1

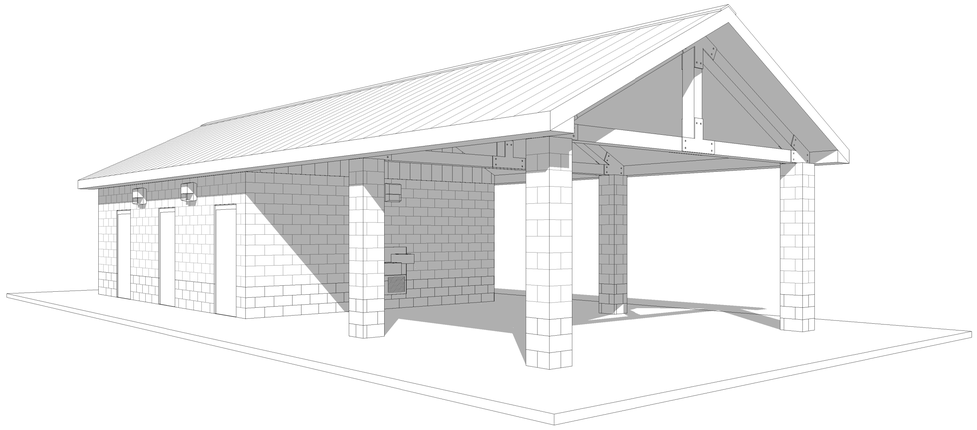
Project Team: MAQA, CME
Print Date: 10/12/2023 6:10:17 PM

## VICINITY MAP


# REED PARK
# RESTROOM

BG+CO PROJECT # 23038
250 S. ELM STREET, FRUITA, CO

09/15/23 BID DOCUMENTS
10/12/23 ADDNEDUM #1



## BUILDING CODE ANALYSIS

CODE JURISDICTION:
2018 IBC, IMC, IPC
2018 IECC (BUILDING IS EXPEMT DUE TO SECTION C402.1.1)
2020 NEC
2009 ICC/ ANSI 117.1

OCCUPANCY:
UTILITY AND MISCELLANEOUS (U)

OCCUPANT LOADS:
STORAGE = WAREHOUSE PER TABLE 1004.5 = 500 GROSS
FLOOR AREA = 220 GSF
OCCUPANT LOAD = 1

SINGLE-USE RESTROOMS = QUANTITY: 5
OCCUPANT LOAD = 5

CONSTRUCTION TYPE:
TYPE V-B

AUTOMATIC SPRINKLER SYSTEM:
NOT SPRINKLED

BUILDING AREA:
ACTUAL TOTAL BUILDING: 1,180 SF
ALLOWED [IBC 506.2] 5,500 SF

BUILDING HEIGHT:
ACTUAL HEIGHT: 16' - 3"AFF, 1 STORY
ALLOWABLE HEIGHT: 40' [IBC 504.2]
FIRE RESISTANCE RATING REQUIREMENTS:
(FOR TYPE V-B CONSTRUCTION) [IBC TABLE 601]
STRUCTURAL FRAME: 0 HRS
BEARING WALLS, EXTERIOR: 0 HRS
BEARING WALLS, INTERIOR: 0 HRS
NON-BEARING WALLS, EXTERIOR: 0 HRS*
*1 HR IF < 10 FT FIRE SEPARATION DISTANCE [IBC TABLE 602]
NON-BEARING WALLS, INTERIOR: 0 HRS
FLOOR CONSTRUCTION: 0 HRS
ROOF CONSTRUCTION: 0 HRS

EXIT TRAVEL DISTANCE:
FOR (U) OCCUPANCY: 100 FT [WITHOUT SPRINKLER SYSTEM, IBC TABLE 1004.2.4]

## MATERIALS LEGEND

- EXISTING CONSTRUCTION
- ASPHALT PAVING (SECTION)
- EARTH (PLAN & SECTION)
- GRANULAR FILL (SECTION)
- STRUCTURAL FILL (SECTION)
- SAND (SECTION)
- CONCRETE (PLAN & SECTION)
- BRICK VENEER
- CONCRETE MASONRY UNITS (CMU) (PLAN & SECTION)
- ENGINEERED STONE (PLAN & SECTION)
- MORTAR NET (SECTION)
- STEEL (SECTION)
- WOOD BLOCKING (CONTINUOUS) (SECTION)
- WOOD BLOCKING (INTERMITTENT) (SECTION)
- WOOD SHEATHING
- WOOD (FINISH) (SECTION & ELEVATION)
- INSULATION (FIBROUS) (PLAN & SECTION)
- INSULATION (RIGID) (PLAN & SECTION)
- STUCCO (SECTION)
- STUCCO (ELEVATION)
- GYPSUM WALL BOARD (GWB) (REFLECTED CEILING PLAN)

## SYMBOLS LEGEND

ROOM NUMBER (PLAN AND SECTION) — ROOM NAME — A202A

DOOR NUMBER (MATCHES ROOM NO., WITH LETTER SUFFIX FOR MULTIPLE DOORS) (PLAN) — D220A

WALL TYPE (PLAN) — 27

NEW COLUMN GRID LINE (PLAN, SECTION, DETAIL OR ELEVATION) — 0

EXISTING COLUMN GRIDLINE (PLAN, SECTION, DETAIL OR ELEVATION) — 0

KEY NOTE — ?

WINDOW / FRAME TYPE — 27

SECTION PAGE REFERENCE (PLAN, SECTION, DETAIL OR ELEVATION) — 1 / A1-1 — View Name — 1/8" = 1'-0"

BUILDING SECTION INDICATOR REFERENCE (PLAN, SECTION, OR ELEVATION) — ELEVATION OR DETAIL NUMBER / SHEET THAT DETAIL IS ON / POINTS IN DIRECTION OF DETAIL

WALL SECTION INDICATOR REFERENCE (PLAN, SECTION, OR ELEVATION) — ELEVATION OR DETAIL NUMBER / SHEET THAT DETAIL IS ON / POINTS IN DIRECTION OF DETAIL

ELEVATION INDICATOR REFERENCE (SECTION, & ELEVATION)

DIMENSION LINES — 1"

NEW CONTOUR — ####

EXISTING CONTOUR — ####

HIDDEN LINE (PLAN, SECTION, DETAIL OR ELEVATION)

OVERHEAD OBJECT (PLAN)

CENTER LINE (PLAN, SECTION, DETAIL OR ELEVATION)

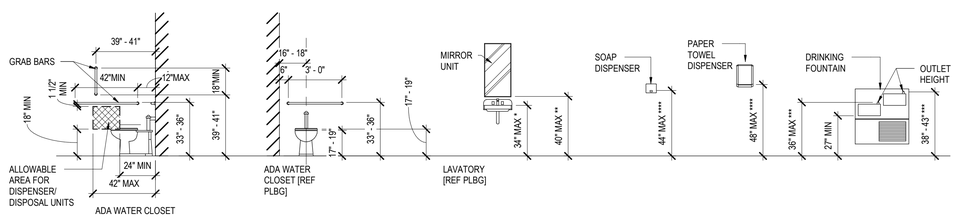
MATCH LINE (PLAN, SECTION, DETAIL OR ELEVATION)

LIMITS OF CONSTRUCTION (PLAN, SECTION, DETAIL OR ELEVATION)

DEMOLISHED ITEMS (PLAN OR DETAIL)

## INDEX TO DRAWINGS






NOTES:
1. ALL FIXTURES AND TOILET ACCESSORIES SHOWN ON THIS DETAIL ARE FOR REFERENCE OF MOUNTING HEIGHT ONLY.
2. ALL FIXTURES AND ACCESSORIES ARE TO BE MOUNTED AT BARRIER FREE HEIGHTS AS RECOMMENDED BY MANUFACTURER'S SPECIFICATIONS.

*DIMENSION IS TO RIM OF FIXTURE
** DIMENSION IS TO BOTTOM EDGE OF REFLECTING SURFACE
*** DIMENSION IS TO T.O. SPOUT OUTLET
**** DIMENSION IS TO T.O. OPERABLE PARTS

2 / T1-1 TYPICAL MOUNTING HEIGHTS
1/4" = 1'-0"

## ABBREVIATIONS

ADD-X ADDENDUM NO. X
AFF ABOVE FINISH FLOOR
AHU AIR HANDLING UNIT
AL ALUMINUM
ALT ALTERNATE
ALT-X ALTERNATE NO. X
AM ACOUSTIC MATERIAL
AM-X ACOUSTIC MATERIAL TYPE X
ARCH ARCHITECT / ARCHITECTURAL
ATTEN ATTENUATION
AVE AVENUE
AVG AVERAGE
B.O. BOTTOM OF
BIT BITUMINOUS
BLDG BUILDING
C/L CENTER LINE
CEM CEMENT / CEMENTITIOUS
CJ CONTROL JOINT
CLG CEILING
CLR CLEAR
CMU CONCRETE MASONRY UNIT(S)
CONC CONCRETE
CONT CONTINUOUS
CPT CARPET
CT CERAMIC TILE
CTR CENTER
D DEEP / DEPTH
DBL DOUBLE
DEMO DEMOLISH / DEMOLITION
DEPT DEPARTMENT
DF DRINKING FOUNTAIN
DIA / Ø DIAMETER
DIM(S) DIMENSION(S)
DN DOWN
DTL DETAIL
DW DISHWASHER
DWG DRAWING
EA EACH
EJ EXPANSION JOINT
EL ELEVATION
ELEC ELECTRICAL
EQ EQUAL
EQUIP EQUIPMENT
EWC ELECTRIC WATER COOLER
EXIST EXISTING
EXT EXTERIOR
F.O. FACE OF
FAAP FIRE ALARM ANNUNCIATOR PANEL
FACP FIRE ALARM CONTROL PANEL
FBO FURNISHED BY OWNER
FD FLOOR DRAIN
FDN FOUNDATION
FE FIRE EXTINGUISHER
FEC FIRE EXTINGUISHER CABINET
FF FINISHED FLOOR
FTG FOOTING
FURN FURNISHING / FURNITURE
GA GAGE
GALV GALVANIZED
GL GLAZING
GL-X GLAZING TYPE X
GWB GYPSUM WALL BOARD
H HIGH / HEIGHT
HC HANDICAPPED
HDW HARDWARE
HDWD HARDWOOD
HM HOLLOW METAL
HORIZ HORIZONTAL
HVAC HEATING VENTILATING & AIR CONDITIONING
ID INSIDE DIAMETER
ILLUM ILLUMINATED
INCL INCLUDED
INSUL INSULATION
INT INTERIOR
L LONG / LENGTH
LAV LAVATORY
LLH LONG LEG HORIZONTAL
LLV LONG LEG VERTICAL
MAS MASONRY
MATL MATERIAL
MAX MAXIMUM
MECH MECHANICAL
MFR MANUFACTURER
MIN MINIMUM
MISC MISCELLANEOUS
MO MASONRY OPENING
MTD MOUNTED
MTL METAL
NA NOT APPLICABLE
NIC NOT IN CONTRACT
NO. NUMBER
NRC NOISE REDUCTION COEFFICIENT
NTS NOT TO SCALE
OC ON CENTER
OD OUTSIDE DIAMETER
OPNG OPENING
OPP OPPOSITE
PERF PERFORATED
PLAM PLASTIC LAMINATE
PLBG PLUMBING
PLYWD PLYWOOD
PNT PAINT
PREFAB PREFABRICATED
PREFIN PREFINISHED
PT PORCELAIN TILE
QT QUARRY TILE
QTY QUANTITY
R RADIUS
RB RUBBER BASE
RCP REFLECTED CEILING PLAN
REF REFERENCE / REFER TO
REFR REFRIGERATOR
REINF REINFORCE (D) (ING)
REQD REQUIRED
RES RESILIENT
RFS ROOM FINISH SCHEDULE
RO ROUGH OPENING
ROW RIGHT OF WAY
RTU ROOF TOP UNIT
SC SEALED CONCRETE
SCHED SCHEDULE (D)
SECT SECTION
SF SQUARE FEET
SIM SIMILAR
SPEC SPECIFICATION
SQ SQUARE
SS STAINLESS STEEL
SSM SOLID SURFACE MATERIAL
STL STEEL
STN STAIN
STRUCT STRUCTURAL
T&G TONGUE & GROOVE
T.O. TOP OF
TEMP TEMPORARY
TV TELEVISION
TYP TYPICAL
UNO UNLESS NOTED OTHERWISE
VCT VINYL COMPOSITION TILE
VERT VERTICAL
VIF VERIFY IN FIELD
VWC VINYL WALL COVERING
W WIDE / WIDTH
W/ WITH
W/O WITHOUT
WD WOOD
WOM WALK OFF MATT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Architecture
Interior Design
Project Management
622 Rood Avenue
Grand Junction, CO 81501
970-242-1058 office
BLYTHE GROUP + co.


REED PARK RESTROOM & BUILDING FACILITIES

250 SOUTH ELM STREET
FRUITA , CO

TITLE SHEET

FOR CONSTRUCTION

| REV. | DESC. | DATE: |
|---|---|---|
| 1 | ADDENDUM #1 | 10/12/23 |

DATE: 09/15/2023

PROJECT #: 23038

SHEET #:

T1-1

Project Team: MKA, CME
Print Date: 10/12/2023 6:10:18 PM

# Structural Calculations

for

Reed Park 36' x 36' Charleston Model
Fruita, CO

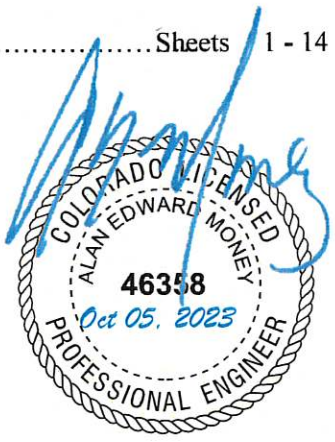


Reed Park 36' x 36' Charleston Model Details..... Sheets 1 - 14

September 29, 2023

Alan E Money

Digitally signed by Alan E Money
Date: 2023.10.05 14:54:21 -07'00'




Structural Calculations and Design Details Applicable to Installation of One - 36' x 36' Charleston Model at the Subject Site


AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES
2447 W 12th Street, Suite 1 Tempe, AZ 85281 Phone: (480) 927-9696 Fax: (480) 927-9797

AMMTEC CONSULTANTS PLLC

| | | | |
|---|---|---|---|
| CLIENT: | CRS 23160 | Prepared By: | AA |
| PROJECT: | Reed Park 36' x 36' Charleston Model | Checked By: | MJK |
| | Fruita, CO | Date: | 09/29/23 |

GENERAL NOTES & BASIS OF DESIGN

1. BUILDING CODE ..... **IBC 2018 ASCE 7-16**
2. GRAVITY DESIGN:

Sail Cloth Ventilation Reduction: **N/A**
EXPOSURE ..... **C** Seismic Design Category = **B**
OCCUPANCY CLASS ..... **A** Risk Category = **II**
3 SECOND WIND GUST ..... **135** (mph) Structure Obstructed **N**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Min: | 0.48 | (kPa) | 10.0 | (psf) | |
| Live Load: | 20.0 | (psf) | Dead Load: | 1.9 | (psf) | Snow Load: | 40.0 | (psf) |
| SR: | 0.957 | (kPa) | Dead Load: | 0.09 | (kPa) | SS = | 1.915 | (kPa) |

Member Dead Load will be included in the Risa Calculation

3. SOILS:

IBC 1806.3.4 Increase for poles
Soil bearing pressure ..... **1,000** psf Soil lateral bearing pressure ..... **200** psf
Minimum footing depth..... **12** (inches) Unless local conditions are greater

CONCRETE

1. CODES AND STANDARDS. Comply with the following Codes:
   A. ACI 318, "Building Code Requirements for Reinforced Concrete".
   B. ACI 347, "Recommended Practice for Concrete Form Work".
2. MATERIALS shall conform to the following:
   A. Cement; ASTM C150, Type V, Portland Cement.
   B. Hard rock aggregates: ASTM C33
   Lightweight aggregates: ASTM C330
   C. Water shall be potable.
   D. Air entrainment: ASTM C260
   E. Fly ash: ASTM C618
   F. Calcium chloride SHALL NOT be used.
3. MIX DESIGNS:
   A. The maximum slump shall be 4" w/o plasticizer added.
   B. Use pea gravel and/or plasticizer in congested areas.
   C. Limit fly ash to 20% of the total cement.
   D. Concrete mixes shall conform to the following:

| Type of Concrete Member | 28 Day Strength (psi)* | W/C Ratio | Dry Weight (pcf) | Max Aggregate Size (inches) | Entrained Air (%) | Min Cement Per CY (lbs) |
|---|---|---|---|---|---|---|
| Footings & Slabs on Grade | 2500 | 0.45 | 150 | 3/4 | 5 ±1 | 517 |

*(Special Inspection not required)

4. CONSTRUCTION: A. Mechanically vibrate concrete during placement.
5. FOOTINGS: B. Center footings on structure above, UNO.
   C. Exterior footings to be embedded a minimum depth.

STEEL 1. CODES AND STANDARDS. Comply with:
   A. CRSI "Manual of Standard Practice".
   B. ACI "Detailing Manual", ACI 315 (or SP-66).

| | | | | | |
|---|---|---|---|---|---|
| Reinforcing: | 60 ksi | A-615 - Grade 60 | HSS Tube: | 46 ksi | A -500 |
| Roof Decking: | 50 ksi | A-792 - Grade 50 | Pipe: | 36 ksi | A-501 |

Bolts ASTM A36, ASTM A307 as specified on details

2. CONSTRUCTION: A. Detail, bolster, and support all rebar. Tie bars securely with proper clearances before casting concrete.
   B. Use rebar free flaky rust, grease, dirt, and other materials, which affect bond.
   C. Minimum lap splices (inches):

| Bar # | #3 | #4 | #5 | #6 |
|---|---|---|---|---|
| Inches | 16 | 20 | 24 | 33 |

   D. Make cold bends. DO NOT use heat. DO NOT re-bend a previously bent bar.
   E. Minimum concrete cover: (securely position and anchor rebar prior to pour)
   Cast against and permanently exposed to earth ..... 3 (inches)
   Slabs-On-Grade (SOG) ..... Center of slab, UNO
   F. DO NOT weld reinforcing unless specifically noted.

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| | | | |
|---|---|---|---|
| CLIENT: | CRS 23160 | Prepared By: | AA |
| PROJECT: | Reed Park 36' x 36' Charleston Model | Checked By: | MJK |
| | Fruita, CO | Date: | 09/29/23 |

| | Member Weights | | |
|---|---|---|---|
| | psf | Area | Ttl Wt (lbs) |
| Roof Type & Guage: | 1.44 | 1296 | 1866 |
| T&G Roofing | 0.0 | 1296 | 0 |
| Misc Appurtenances & Matls: | 0.5 | 1296 | 648 |
| Total Material Risa Weight = | | | 3.462 |
| Total Weight = | | | 2,518 |
| 20% Snow Load for Seismic = | | | 5789 |
| Total Load for Seismic = | | | 8,306 |

| Areas Trib: | | | | | |
|---|---|---|---|---|---|
| $C_{NW}$ = | 648 | SF | $C_{NL}$ = | 648 | SF |
| $C_{NWe}$ = | 324 | SF | $C_{NLe}$ = | 324 | SF |

Roof Snow Load [IBC 1608, ASCE 7]

(Eq 7-1) $p_f = 0.7 * C_e * C_t * I * p_g$

| | | |
|---|---|---|
| $p_f$=Ground Snow Load= | 40 | psf |
| $C_e$=Exposure Factor= | 1.0 | [ASCE T 7-2] |
| $C_t$*= Thermal Factor= | 1.2 | [ASCE T 7-3] |
| I= Impoortance Factor= | 1.0 | [ASCE T 7-4] |
| $p_f$= | 33.6 | psf |
| $C_s$= Sloped Roof Coeff= | 0.94 | [ASCE F 7-2] |
| (Eq 7-2) $p_s = C_s * p_f$ $p_s$= | 31.58 | psf |

Spans

| |
|---|
| 2 |

**Canopy Dimensions**

| | | | | | |
|---|---|---|---|---|---|
| Width | 36 | (ft) | Length | 36 | (ft) |
| Roof Pitch | 4 | (in) V | | 12 | (in) H |
| Column Height | 8.167 | (ft) Columns | | 6 | |
| Top of Structure Height | 13.5 | (ft) | | | |

Structure Geometry Rectangle

Rectangle Area Formula

A=W*L= 1296.0 ft^2

AMMTEC PLLC CONSULTANTS

| | | | |
|---|---|---|---|
| CLIENT: | CRS 23160 | Prepared By: | AA |
| PROJECT: | Reed Park 36' x 36' Charleston Model | Checked By: | MJK |
| | Fruita, CO | Date: | ###### |

Calculaton of Design Wind Loads - Main Force Resisting Systems ASCE 7-16

Exposure: C
Occupancy Class: 1
3s Wind Gust (mph): 135

Eq: $p=q_h*G*C_N$ (Eq 27.3-2) [274]

| z | Exp |
|---|---|
| ft | C |
| 0 | 0.85 |
| 15 | 0.85 |
| 20 | 0.90 |
| 25 | 0.94 |
| 30 | 0.98 |
| 35 | 1.01 |
| 40 | 1.04 |
| 45 | 1.07 |
| 50 | 1.09 |
| 60 | 1.13 |

Where: $q_h= 0.00256*k_z*k_{zt}*k_D*V^2*I$ (Eq 26.10-1) [268]

z= 13.5 $k_z$= 0.85 (T 26.10-1) [268]

$k_{zt}= (1+k_1*k2*k_3)^2$ (F 26.8-1) [267]

$k_1$= 0.29 $H/L_H$=0 (F 26.8-1) [267]

$k_2$= 1.0 $X/L_H$=0 (F 26.8-1) [267]

$k_3$= 0.0 $Z/h_H$=Z/0 (F 26.8-1) [267]

$k_{zt}$= 1.0

$k_D$= 0.85

V= 135 mph (F 26.5-1B) [252]

$q_h= 0.00256*0.85*1*0.85*135^2*1=$ **33.71** psf

G= **0.85** (S 26.11) [269]

$q_h*G=$ **28.65** psf

| Gable Roof Pitch = | Rise | Run |
|---|---|---|
| | 4 | 12 |

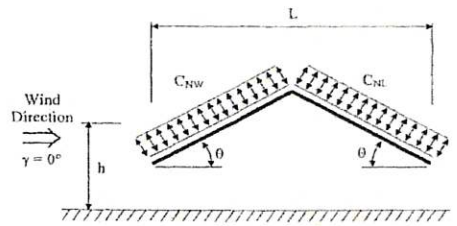
α= 18.4 Degrees

**CN Values interpolated to 18.4 degrees** $C_{NW}$ = p (psf) $C_{NL}$ = p (psf) α= 18.4

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Case A -Clear/Unobstructed Wind Flow: 0°,180° | 1.10 | 31.52 | -0.17 | -4.97 | $\Delta C_N$ = | 1.27 | $C_{N(Avg)}$ = | 0.46 |
| Case B -Clear/Unobstructed Wind Flow: 0°,180° | 0.01 | 0.27 | -0.96 | -27.62 | $\Delta C_N$ = | 0.97 | $C_{N(Avg)}$ = | -0.48 |

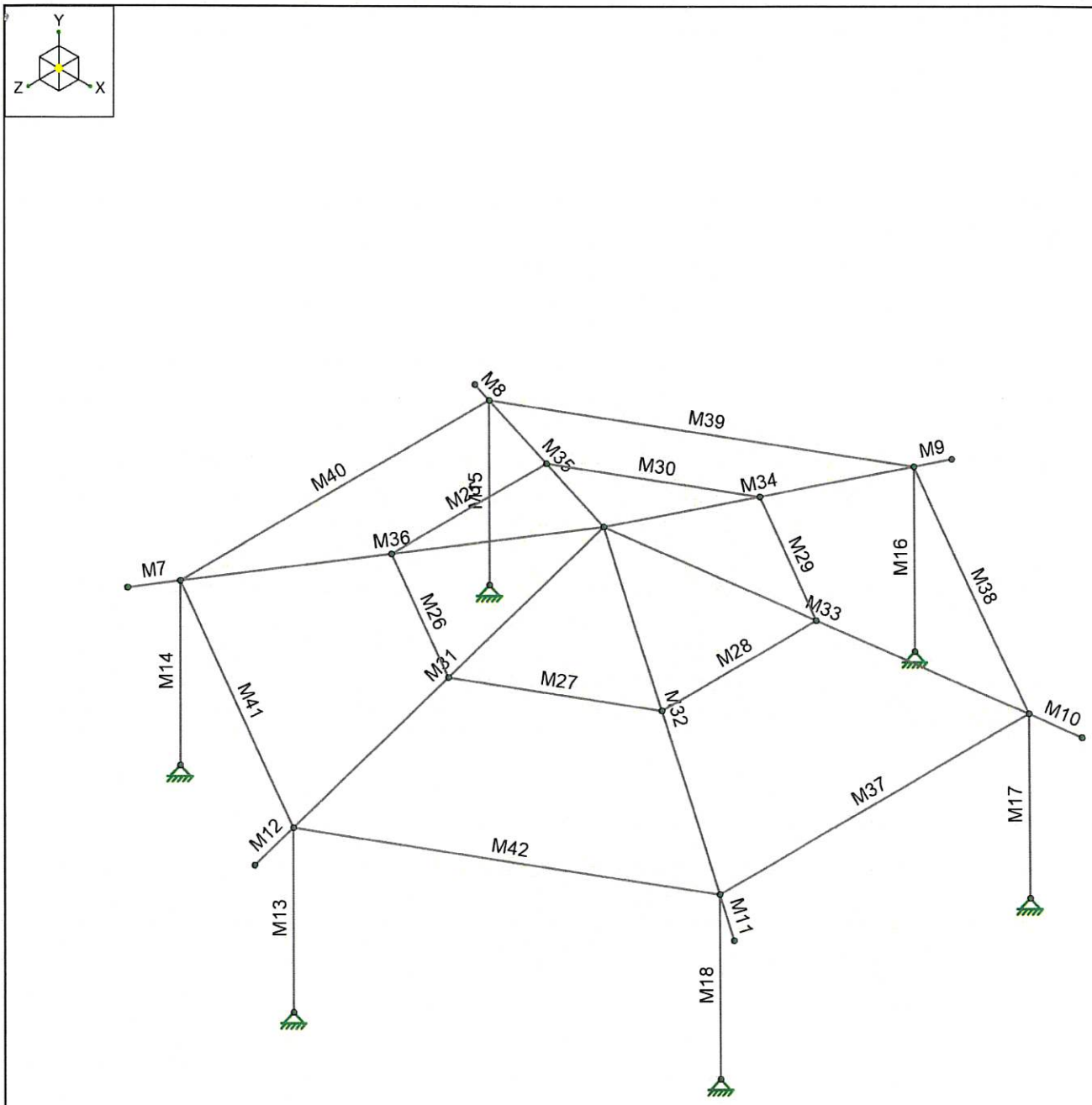
(F27.4-4 thru F27.3-7) [279-282]

| Main Wind Force Resisting System | | 0.25 ≤ h/L ≤ 1.0 |
|---|---|---|
| Figure 6-18B | Net Pressure Coefficient, $C_N$ | Pitched Free Roofs |
| Open Buildings | | θ ≤ 45°, γ = 0°, 180° |



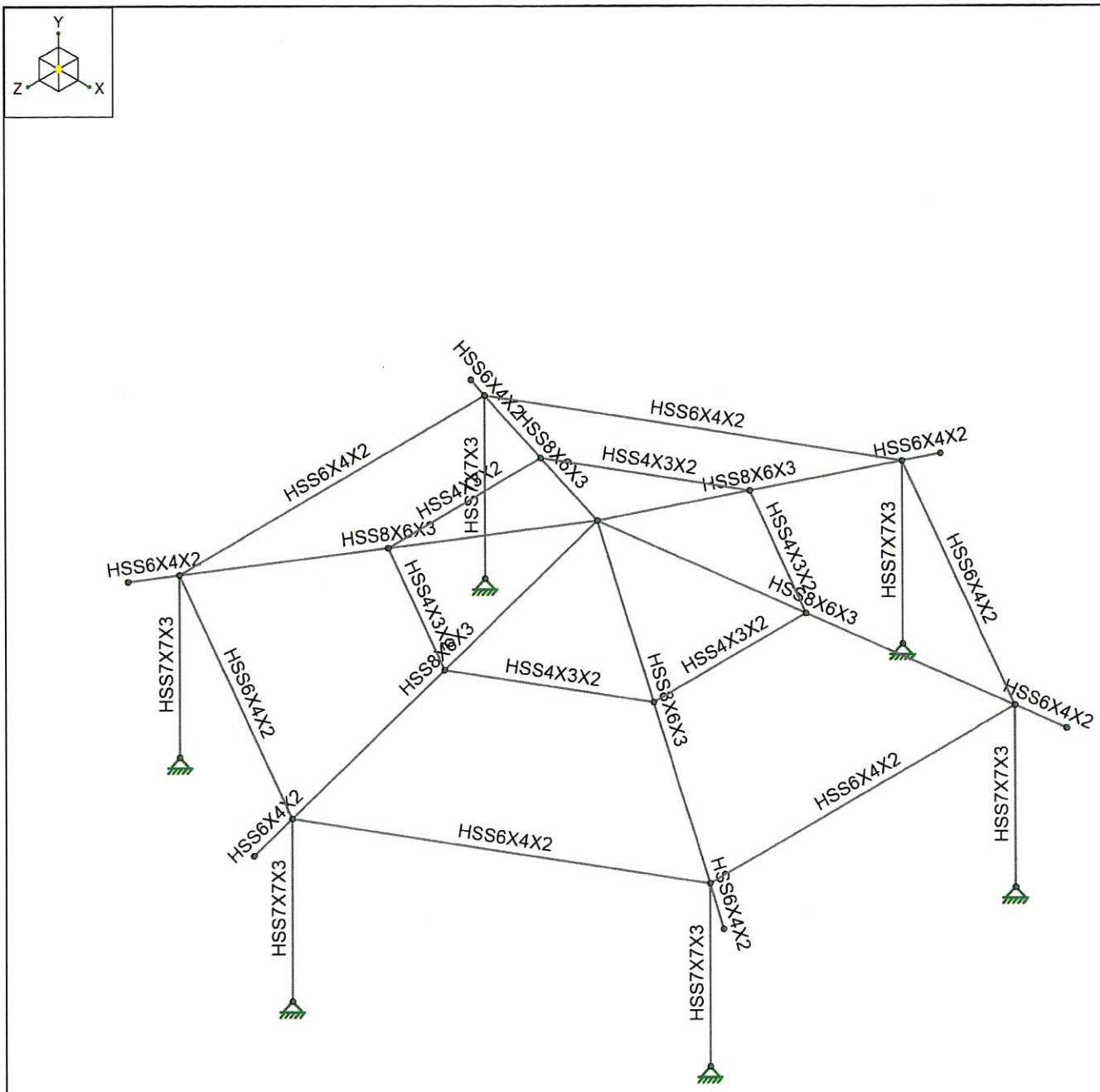

| Roof Angle, θ | Load Case | Wind Direction, g = 0°, 180° | | | |
|---|---|---|---|---|---|
| | | Clear Wind Flow | | Obstructed Wind Flow | |
| | | $C_{NW}$ | $C_{NL}$ | $C_{NW}$ | $C_{NL}$ |
| 7.5° | A | 1.1 | -0.3 | -1.6 | -1 |
| | B | 0.2 | -1.2 | -0.9 | -1.7 |
| 15° | A | 1.1 | -0.4 | -1.2 | -1 |
| | B | 0.1 | -1.1 | -0.6 | -1.6 |
| 22.5° | A | 1.1 | 0.1 | -1.2 | -1.2 |
| | B | -0.1 | -0.8 | -0.8 | -1.7 |
| 30° | A | 1.3 | 0.3 | -0.7 | -0.7 |
| | B | -0.1 | -0.9 | -0.2 | -1.1 |
| 37.5° | A | 1.3 | 0.6 | -0.6 | -0.6 |
| | B | -0.2 | -0.6 | -0.3 | -0.9 |
| 45° | A | 1.1 | 0.9 | -0.5 | -0.5 |
| | B | -0.3 | -0.5 | -0.3 | -0.7 |

Notes
1. $C_{NW}$ and $C_{NL}$ denote net pressures (contributions from top and bottom surfaces) for windward and lee roof surfaces, respectively.
2. Clear wind flow denotes relatively unobstructed wind flow with blockage less than or equal to 50%. Obstructed wind flow denotes objects below roof inhibiting wind flow (>50% blockage).
3. For values of θ between 7.5° and 45°, linear interpolation is permitted. For values of θ less than 7.5°, use monoslope roof load coefficients.
4. Plus and minus signs signify pressures acting towards and away from the top roof surface, respectively.
5. All load cases shown for each roof angle shall be investigated.
6. Notation:
   L: horizontal dimension of roof, measured in the along wind direction, ft. (m)
   h: mean roof height, ft. (m)
   γ: direction of wind, degrees
   θ: angle of plane of roof from horizontal, degrees




Envelope Only Solution

| | | |
|---|---|---|
| CRS | Reed Park | SK-1 |
| AA | | Sep 29, 2023 |
| 23160 | | Reed Park 36' x 36' Charleston M... |




Envelope Only Solution

| | | |
|---|---|---|
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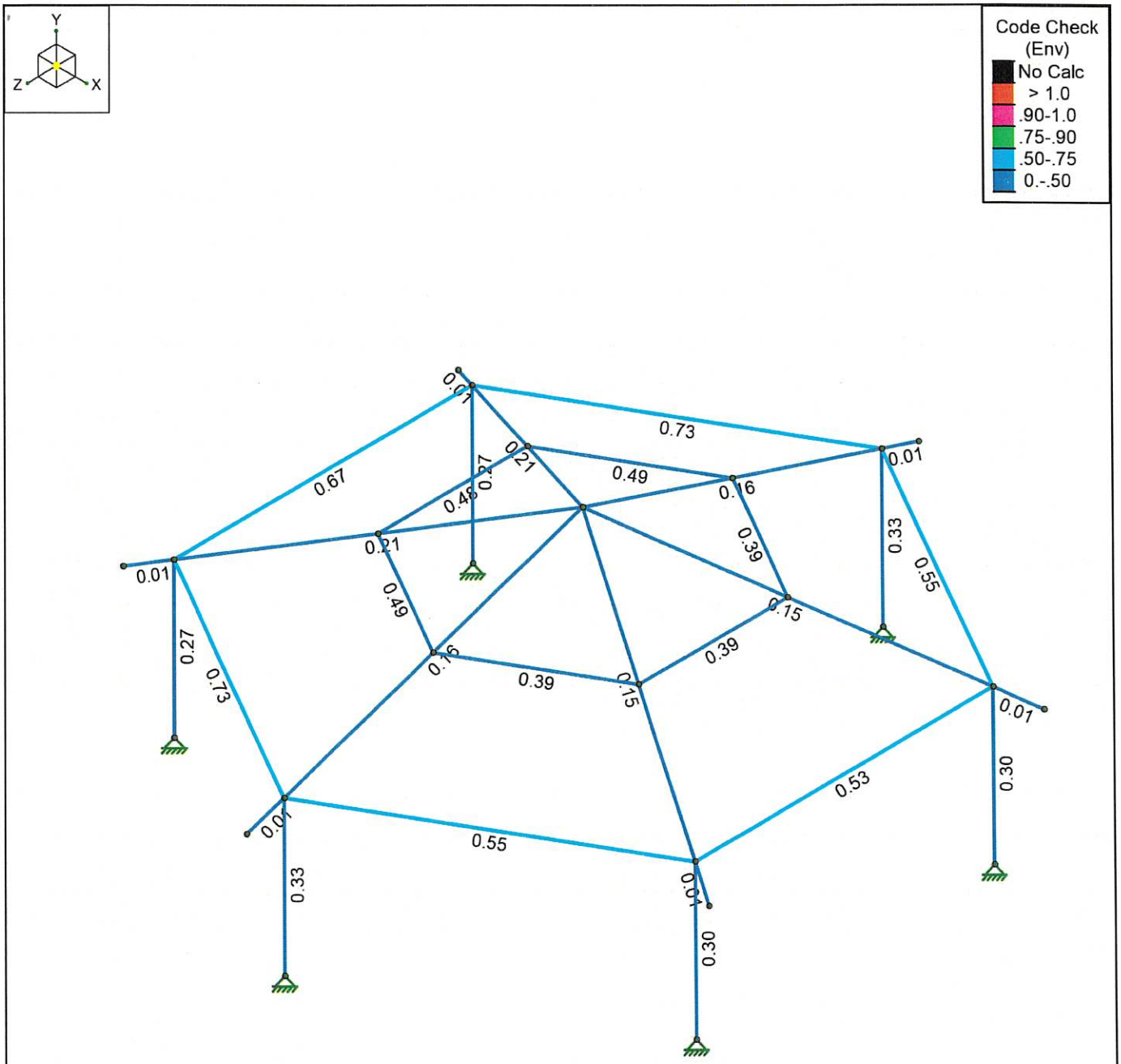
| AA | | Sep 29, 2023 |
| 23160 | | Reed Park 36' x 36' Charleston M... |




Member Code Checks Displayed (Enveloped)
Envelope Only Solution

| | | |
|---|---|---|
| CRS | Reed Park | SK-3 |
| AA | | Sep 29, 2023 |
| 23160 | | Reed Park 36' x 36' Charleston M... |

### Node Coordinates

| | Label | X [ft] | Y [ft] | Z [ft] | Detach From Diaphragm |
|---|---|---|---|---|---|
| 1 | N1 | -13.856406 | 0 | 8 | |
| 2 | N2 | -13.856406 | 0 | -8 | |
| 3 | N3 | 0 | 0 | -16 | |
| 4 | N4 | 13.856406 | 0 | -8 | |
| 5 | N5 | 0 | 0 | 16 | |
| 6 | N6 | 13.856406 | 0 | 8 | |
| 7 | N7 | -15.588457 | 7.5 | 9 | |
| 8 | N8 | -15.588457 | 7.5 | -9 | |
| 9 | N9 | 0 | 7.5 | -18 | |
| 10 | N10 | 15.588457 | 7.5 | -9 | |
| 11 | N11 | 15.588457 | 7.5 | 9 | |
| 12 | N12 | 0 | 7.5 | 18 | |
| 13 | N13 | -13.856406 | 8.167 | 8 | |
| 14 | N14 | -13.856406 | 8.167 | -8 | |
| 15 | N15 | 0 | 8.167 | -16 | |
| 16 | N16 | 13.856406 | 8.167 | -8 | |
| 17 | N17 | 13.856406 | 8.167 | 8 | |
| 18 | N18 | 0 | 8.167 | 16 | |
| 19 | N31 | 0 | 13.5 | 0 | |
| 20 | N20 | 0 | 10.8335 | 8 | |
| 21 | N21 | 6.928203 | 10.8335 | 4 | |
| 22 | N22 | 6.928203 | 10.8335 | -4 | |
| 23 | N23 | 0 | 10.8335 | -8 | |
| 24 | N24 | -6.928203 | 10.8335 | -4 | |
| 25 | N25 | -6.928203 | 10.8335 | 4 | |

### Node Boundary Conditions

| | Node Label | X [lb/in] | Y [lb/in] | Z [lb/in] |
|---|---|---|---|---|
| 1 | N1 | Reaction | Reaction | Reaction |
| 2 | N2 | Reaction | Reaction | Reaction |
| 3 | N5 | Reaction | Reaction | Reaction |
| 4 | N6 | Reaction | Reaction | Reaction |
| 5 | N3 | Reaction | Reaction | Reaction |
| 6 | N4 | Reaction | Reaction | Reaction |

### Hot Rolled Steel Properties

| | Label | E [psi] | G [psi] | Nu | Therm. Coeff. [1e$^{5}$°F$^{-1}$] | Density [lb/ft$^{3}$] | Yield [psi] | Ry | Fu [psi] | Rt |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A36 Gr.36 | 2.9e+7 | 1.115e+7 | 0.3 | 0.65 | 490 | 36000 | 1.5 | 58000 | 1.2 |
| 2 | A572 Gr.50 | 2.9e+7 | 1.115e+7 | 0.3 | 0.65 | 490 | 50000 | 1.1 | 58000 | 1.2 |
| 3 | A992 | 2.9e+7 | 1.115e+7 | 0.3 | 0.65 | 490 | 50000 | 1.1 | 58000 | 1.2 |
| 4 | A500 Gr.42 | 2.9e+7 | 1.115e+7 | 0.3 | 0.65 | 490 | 42000 | 1.3 | 58000 | 1.1 |
| 5 | A500 Gr.46 | 2.9e+7 | 1.115e+7 | 0.3 | 0.65 | 490 | 46000 | 1.2 | 58000 | 1.1 |

### Hot Rolled Steel Section Sets

| | Label | Shape | Type | Design List | Material | Design Rule | Area [in$^{2}$] | Iyy [in$^{4}$] | Izz [in$^{4}$] | J [in$^{4}$] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Column | HSS7X7X3 | Column | Tube | A500 Gr.46 | Typical | 4.67 | 36 | 36 | 56.1 |
| 2 | Main Beam | HSS8X6X3 | Beam | Tube | A500 Gr.46 | Typical | 4.67 | 28.2 | 43.7 | 53.7 |
| 3 | Perimeter Beam | HSS6X4X2 | Beam | Tube | A500 Gr.46 | Typical | 2.23 | 6.15 | 11.4 | 12.6 |
| 4 | Mid Beam | HSS4X3X2 | Beam | Tube | A500 Gr.46 | Typical | 1.54 | 2.27 | 3.52 | 4.38 |
| 5 | Extension Beam | HSS6X4X2 | Beam | Tube | A500 Gr.46 | Typical | 2.23 | 6.15 | 11.4 | 12.6 |

### Member Primary Data

| | Label | I Node | J Node | Section/Shape | Type | Design List | Material | Design Rule |
|---|---|---|---|---|---|---|---|---|
| 1 | M7 | N7 | N13 | Extension Beam | Beam | Tube | A500 Gr.46 | Typical |
| 2 | M8 | N8 | N14 | Extension Beam | Beam | Tube | A500 Gr.46 | Typical |
| 3 | M9 | N9 | N15 | Extension Beam | Beam | Tube | A500 Gr.46 | Typical |
| 4 | M10 | N10 | N16 | Extension Beam | Beam | Tube | A500 Gr.46 | Typical |
| 5 | M11 | N11 | N17 | Extension Beam | Beam | Tube | A500 Gr.46 | Typical |
| 6 | M12 | N12 | N18 | Extension Beam | Beam | Tube | A500 Gr.46 | Typical |
| 7 | M13 | N5 | N18 | Column | Column | Tube | A500 Gr.46 | Typical |
| 8 | M14 | N1 | N13 | Column | Column | Tube | A500 Gr.46 | Typical |
| 9 | M15 | N2 | N14 | Column | Column | Tube | A500 Gr.46 | Typical |
| 10 | M16 | N3 | N15 | Column | Column | Tube | A500 Gr.46 | Typical |
| 11 | M17 | N4 | N16 | Column | Column | Tube | A500 Gr.46 | Typical |
| 12 | M18 | N6 | N17 | Column | Column | Tube | A500 Gr.46 | Typical |
| 13 | M31 | N18 | N31 | Main Beam | Beam | Tube | A500 Gr.46 | Typical |
| 14 | M32 | N31 | N17 | Main Beam | Beam | Tube | A500 Gr.46 | Typical |
| 15 | M33 | N16 | N31 | Main Beam | Beam | Tube | A500 Gr.46 | Typical |
| 16 | M34 | N31 | N15 | Main Beam | Beam | Tube | A500 Gr.46 | Typical |
| 17 | M35 | N14 | N31 | Main Beam | Beam | Tube | A500 Gr.46 | Typical |
| 18 | M36 | N13 | N31 | Main Beam | Beam | Tube | A500 Gr.46 | Typical |
| 19 | M25 | N24 | N25 | Mid Beam | Beam | Tube | A500 Gr.46 | Typical |
| 20 | M26 | N25 | N20 | Mid Beam | Beam | Tube | A500 Gr.46 | Typical |
| 21 | M27 | N20 | N21 | Mid Beam | Beam | Tube | A500 Gr.46 | Typical |
| 22 | M28 | N21 | N22 | Mid Beam | Beam | Tube | A500 Gr.46 | Typical |
| 23 | M29 | N22 | N23 | Mid Beam | Beam | Tube | A500 Gr.46 | Typical |
| 24 | M30 | N23 | N24 | Mid Beam | Beam | Tube | A500 Gr.46 | Typical |
| 25 | M37 | N17 | N16 | Perimeter Beam | Beam | Tube | A500 Gr.46 | Typical |
| 26 | M38 | N16 | N15 | Perimeter Beam | Beam | Tube | A500 Gr.46 | Typical |
| 27 | M39 | N15 | N14 | Perimeter Beam | Beam | Tube | A500 Gr.46 | Typical |
| 28 | M40 | N14 | N13 | Perimeter Beam | Beam | Tube | A500 Gr.46 | Typical |
| 29 | M41 | N13 | N18 | Perimeter Beam | Beam | Tube | A500 Gr.46 | Typical |
| 30 | M42 | N18 | N17 | Perimeter Beam | Beam | Tube | A500 Gr.46 | Typical |

### Hot Rolled Steel Design Parameters

| | Label | Shape | Length [ft] | Lcomp top [ft] | Channel Conn. | a [ft] | y sway | z sway | Function |
|---|---|---|---|---|---|---|---|---|---|
| 1 | M7 | Extension Beam | 2.108 | Lbyy | N/A | N/A | | | Lateral |
| 2 | M8 | Extension Beam | 2.108 | Lbyy | N/A | N/A | | | Lateral |
| 3 | M9 | Extension Beam | 2.108 | Lbyy | N/A | N/A | | | Lateral |
| 4 | M10 | Extension Beam | 2.108 | Lbyy | N/A | N/A | | | Lateral |
| 5 | M11 | Extension Beam | 2.108 | Lbyy | N/A | N/A | | | Lateral |
| 6 | M12 | Extension Beam | 2.108 | Lbyy | N/A | N/A | | | Lateral |
| 7 | M13 | Column | 8.167 | Lbyy | N/A | N/A | | | Lateral |
| 8 | M14 | Column | 8.167 | Lbyy | N/A | N/A | | | Lateral |
| 9 | M15 | Column | 8.167 | Lbyy | N/A | N/A | | | Lateral |
| 10 | M16 | Column | 8.167 | Lbyy | N/A | N/A | | | Lateral |
| 11 | M17 | Column | 8.167 | Lbyy | N/A | N/A | | | Lateral |
| 12 | M18 | Column | 8.167 | Lbyy | N/A | N/A | | | Lateral |
| 13 | M31 | Main Beam | 16.865 | Lbyy | N/A | N/A | | | Lateral |
| 14 | M32 | Main Beam | 16.865 | Lbyy | N/A | N/A | | | Lateral |
| 15 | M33 | Main Beam | 16.865 | Lbyy | N/A | N/A | | | Lateral |
| 16 | M34 | Main Beam | 16.865 | Lbyy | N/A | N/A | | | Lateral |
| 17 | M35 | Main Beam | 16.865 | Lbyy | N/A | N/A | | | Lateral |
| 18 | M36 | Main Beam | 16.865 | Lbyy | N/A | N/A | | | Lateral |
| 19 | M25 | Mid Beam | 8 | Lbyy | N/A | N/A | | | Lateral |
| 20 | M26 | Mid Beam | 8 | Lbyy | N/A | N/A | | | Lateral |
| 21 | M27 | Mid Beam | 8 | Lbyy | N/A | N/A | | | Lateral |

### Hot Rolled Steel Design Parameters (Continued)

| | Label | Shape | Length [ft] | Lcomp top [ft] | Channel Conn. | a [ft] | y sway | z sway | Function |
|---|---|---|---|---|---|---|---|---|---|
| 22 | M28 | Mid Beam | 8 | Lbyy | N/A | N/A | | | Lateral |
| 23 | M29 | Mid Beam | 8 | Lbyy | N/A | N/A | | | Lateral |
| 24 | M30 | Mid Beam | 8 | Lbyy | N/A | N/A | | | Lateral |
| 25 | M37 | Perimeter Beam | 16 | Lbyy | N/A | N/A | | | Lateral |
| 26 | M38 | Perimeter Beam | 16 | Lbyy | N/A | N/A | | | Lateral |
| 27 | M39 | Perimeter Beam | 16 | Lbyy | N/A | N/A | | | Lateral |
| 28 | M40 | Perimeter Beam | 16 | Lbyy | N/A | N/A | | | Lateral |
| 29 | M41 | Perimeter Beam | 16 | Lbyy | N/A | N/A | | | Lateral |
| 30 | M42 | Perimeter Beam | 16 | Lbyy | N/A | N/A | | | Lateral |

### Member Point Loads

No Data to Print...

### Member Area Loads (BLC 1 : Dead Load)

| | Node A | Node B | Node C | Direction | Load Direction | Magnitude [psf] |
|---|---|---|---|---|---|---|
| 1 | N11 | N12 | N31 | Y | Perp to A-B | -2 |
| 2 | N12 | N7 | N31 | Y | Perp to A-B | -2 |
| 3 | N7 | N8 | N31 | Y | Perp to A-B | -2 |
| 4 | N8 | N9 | N31 | Y | Perp to A-B | -2 |
| 5 | N9 | N10 | N31 | Y | Perp to A-B | -2 |
| 6 | N10 | N11 | N31 | Y | Perp to A-B | -2 |

### Member Area Loads (BLC 2 : Live Load)

| | Node A | Node B | Node C | Direction | Load Direction | Magnitude [psf] |
|---|---|---|---|---|---|---|
| 1 | N11 | N12 | N31 | Y | Perp to A-B | -20 |
| 2 | N12 | N7 | N31 | Y | Perp to A-B | -20 |
| 3 | N7 | N8 | N31 | Y | Perp to A-B | -20 |
| 4 | N8 | N9 | N31 | Y | Perp to A-B | -20 |
| 5 | N9 | N10 | N31 | Y | Perp to A-B | -20 |
| 6 | N10 | N11 | N31 | Y | Perp to A-B | -20 |

### Member Area Loads (BLC 3 : Snow Load)

| | Node A | Node B | Node C | Direction | Load Direction | Magnitude [psf] |
|---|---|---|---|---|---|---|
| 1 | N11 | N12 | N31 | Y | Perp to A-B | -31.58 |
| 2 | N12 | N7 | N31 | Y | Perp to A-B | -31.58 |
| 3 | N7 | N8 | N31 | Y | Perp to A-B | -31.58 |
| 4 | N8 | N9 | N31 | Y | Perp to A-B | -31.58 |
| 5 | N9 | N10 | N31 | Y | Perp to A-B | -31.58 |
| 6 | N10 | N11 | N31 | Y | Perp to A-B | -31.58 |

### Member Area Loads (BLC 4 : Wind Load)

| | Node A | Node B | Node C | Direction | Load Direction | Magnitude [psf] |
|---|---|---|---|---|---|---|
| 1 | N12 | N7 | N31 | Perp | Perp to A-B | 31.52 |
| 2 | N7 | N8 | N31 | Perp | Perp to A-B | 31.52 |
| 3 | N8 | N9 | N31 | Perp | Perp to A-B | 31.52 |
| 4 | N12 | N11 | N31 | Perp | Perp to A-B | -4.97 |
| 5 | N11 | N10 | N31 | Perp | Perp to A-B | -4.97 |
| 6 | N10 | N9 | N31 | Perp | Perp to A-B | -4.97 |

### Member Area Loads (BLC 5 : Earthquake Load)

| | Node A | Node B | Node C | Direction | Load Direction | Magnitude [psf] |
|---|---|---|---|---|---|---|
| 1 | N11 | N12 | N31 | X | Perp to A-B | 1.61 |
| 2 | N12 | N7 | N31 | X | Perp to A-B | 1.61 |
| 3 | N7 | N8 | N31 | X | Perp to A-B | 1.61 |
| 4 | N8 | N9 | N31 | X | Perp to A-B | 1.61 |
| 5 | N9 | N10 | N31 | X | Perp to A-B | 1.61 |
| 6 | N10 | N11 | N31 | X | Perp to A-B | 1.61 |

### Member Area Loads (BLC 6 : Wind uplift)

| | Node A | Node B | Node C | Direction | Load Direction | Magnitude [psf] |
|---|---|---|---|---|---|---|
| 1 | N12 | N7 | N31 | Perp | Perp to A-B | 0.27 |
| 2 | N7 | N8 | N31 | Perp | Perp to A-B | 0.27 |
| 3 | N8 | N9 | N31 | Perp | Perp to A-B | 0.27 |
| 4 | N12 | N11 | N31 | Perp | Perp to A-B | -27.62 |
| 5 | N11 | N10 | N31 | Perp | Perp to A-B | -27.62 |
| 6 | N10 | N9 | N31 | Perp | Perp to A-B | -27.62 |

### Basic Load Cases

| | BLC Description | Category | Y Gravity | Distributed | Area(Member) |
|---|---|---|---|---|---|
| 1 | Dead Load | DL | -1 | | 6 |
| 2 | Live Load | RLL | | | 6 |
| 3 | Snow Load | SL | | | 6 |
| 4 | Wind Load | WL | | | 6 |
| 5 | Earthquake Load | EL | | | 6 |
| 6 | Wind uplift | WL | | | 6 |
| 7 | BLC 1 Transient Area Loads | None | | 164 | |
| 8 | BLC 2 Transient Area Loads | None | | 164 | |
| 9 | BLC 3 Transient Area Loads | None | | 164 | |
| 10 | BLC 4 Transient Area Loads | None | | 391 | |
| 11 | BLC 5 Transient Area Loads | None | | 164 | |
| 12 | BLC 6 Transient Area Loads | None | | 391 | |

### Load Combinations

| | Description | Solve | BLC | Factor | BLC | Factor | BLC | Factor |
|---|---|---|---|---|---|---|---|---|
| 1 | Case 1 | Yes | DL | 1 | | | | |
| 2 | Case 3 | Yes | DL | 1 | RLL | 1 | | |
| 3 | Case 3 SL | Yes | DL | 1 | SL | 1 | | |
| 4 | Case 4 Lr | Yes | DL | 1 | RLL | 0.75 | | |
| 5 | Case 4 SL | Yes | DL | 1 | SL | 0.75 | | |
| 6 | Case 5 | Yes | DL | 1 | 4 | 0.6 | | |
| 7 | Case 6a snow | Yes | DL | 1 | 4 | 0.45 | SL | 0.75 |
| 8 | Case 6a Lr | Yes | DL | 1 | 4 | 0.45 | RLL | 0.75 |
| 9 | Case 6b snow | Yes | DL | 1 | SL | 0.75 | EL | 0.525 |
| 10 | Case 7 | Yes | DL | 0.6 | 4 | 0.6 | | |
| 11 | Case 8 | Yes | DL | 0.6 | EL | 0.7 | | |
| 12 | Case 5 Up | Yes | DL | 1 | 6 | 0.6 | | |
| 13 | Case 7 Up | Yes | DL | 0.6 | 6 | 0.6 | | |
| 14 | LIVE LOAD CHECK | | RLL | 1 | | | | |

### Envelope Node Reactions

| | Node Label | | X [lb] | LC | Y [lb] | LC | Z [lb] | LC | MX [lb-ft] | LC | MY [lb-ft] | LC | MZ [lb-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | N1 | max | 421.811 | 3 | 5989.245 | 7 | -2.976 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 2 | | min | -139.136 | 11 | 351.655 | 11 | -292.939 | 7 | 0 | 1 | 0 | 1 | 0 | 1 |
| 3 | N2 | max | 421.796 | 3 | 5991.829 | 7 | 293.174 | 7 | 0 | 13 | 0 | 13 | 0 | 13 |
| 4 | | min | -139.139 | 11 | 351.759 | 11 | 2.82 | 13 | 0 | 1 | 0 | 1 | 0 | 1 |
| 5 | N5 | max | 488.333 | 12 | 5625.089 | 3 | -37.938 | 11 | 0 | 13 | 0 | 13 | 0 | 13 |
| 6 | | min | -474.047 | 10 | 526.672 | 11 | -487.301 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 7 | N6 | max | 76.992 | 13 | 5626.468 | 3 | -20.967 | 10 | 0 | 13 | 0 | 13 | 0 | 13 |
| 8 | | min | -561.99 | 7 | 701.668 | 11 | -246.064 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 9 | N3 | max | 488.632 | 13 | 5625.089 | 3 | 487.301 | 3 | 0 | 13 | 0 | 13 | 0 | 13 |
| 10 | | min | -474.342 | 6 | 526.656 | 11 | 37.936 | 11 | 0 | 1 | 0 | 1 | 0 | 1 |
| 11 | N4 | max | 77.295 | 13 | 5624.012 | 3 | 246.1 | 3 | 0 | 13 | 0 | 13 | 0 | 13 |
| 12 | | min | -561.956 | 7 | 701.596 | 11 | 20.848 | 10 | 0 | 1 | 0 | 1 | 0 | 1 |
| 13 | Totals: | max | 1772.28 | 12 | 33751.137 | 3 | 0 | 13 | | | | | | |
| 14 | | min | -1720.44 | 10 | 3160.006 | 11 | 0 | 6 | | | | | | |

### Envelope Member End Reactions

| | Member | Member End | | Axial[lb] | LC | y Shear[lb] | LC | z Shear[lb] | LC | Torque[lb-ft] | LC | y-y Moment[lb-ft] | LC | z-z Moment[lb-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M7 | I | max | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 2 | | | min | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 3 | | J | max | -2.112 | 11 | -11.303 | 13 | 0.954 | 11 | 0 | 13 | 0.563 | 11 | 54.285 | 7 |
| 4 | | | min | -23.052 | 3 | -80.066 | 7 | 0 | 1 | 0 | 1 | -0.004 | 6 | 10.895 | 13 |
| 5 | M8 | I | max | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 6 | | | min | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 7 | | J | max | -2.112 | 11 | -11.303 | 13 | 0.38 | 10 | 0 | 13 | 0 | 5 | 54.28 | 7 |
| 8 | | | min | -23.052 | 3 | -80.066 | 7 | -0.954 | 11 | 0 | 1 | -0.563 | 11 | 10.895 | 13 |
| 9 | M9 | I | max | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 10 | | | min | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 11 | | J | max | -3.68 | 11 | -11.034 | 11 | 2.33 | 12 | 0 | 13 | 1.478 | 13 | 48.487 | 7 |
| 12 | | | min | -23.052 | 3 | -69.21 | 7 | -2.262 | 6 | 0 | 1 | -1.434 | 10 | 10.738 | 11 |
| 13 | M10 | I | max | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 14 | | | min | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 15 | | J | max | -3.68 | 10 | -10.511 | 11 | 0 | 5 | 0 | 13 | 0.007 | 12 | 47.826 | 3 |
| 16 | | | min | -23.052 | 3 | -69.12 | 3 | -0.954 | 11 | 0 | 1 | -0.563 | 11 | 10.428 | 11 |
| 17 | M11 | I | max | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 18 | | | min | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 19 | | J | max | -3.68 | 10 | -10.511 | 11 | 0.954 | 11 | 0 | 13 | 0.563 | 11 | 47.822 | 3 |
| 20 | | | min | -23.052 | 3 | -69.12 | 3 | -0.333 | 12 | 0 | 1 | 0 | 1 | 10.428 | 11 |
| 21 | M12 | I | max | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 22 | | | min | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 23 | | J | max | -3.68 | 11 | -11.034 | 11 | 2.583 | 6 | 0 | 13 | 1.43 | 6 | 48.46 | 7 |
| 24 | | | min | -23.052 | 3 | -71.019 | 7 | -2.661 | 13 | 0 | 1 | -1.473 | 13 | 10.738 | 11 |
| 25 | M13 | I | max | 5625.089 | 3 | 474.047 | 10 | -37.938 | 11 | 0 | 13 | 0 | 13 | 0 | 13 |
| 26 | | | min | 526.672 | 11 | -488.333 | 12 | -487.301 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 27 | | J | max | 5495.307 | 3 | 474.047 | 10 | -37.938 | 11 | 0 | 13 | -309.84 | 11 | 3988.214 | 12 |
| 28 | | | min | 448.803 | 11 | -488.333 | 12 | -487.301 | 3 | 0 | 1 | -3979.79 | 3 | -3871.538 | 10 |
| 29 | M14 | I | max | 5989.245 | 7 | 139.136 | 11 | -2.976 | 13 | 0 | 13 | 0 | 13 | 0 | 13 |
| 30 | | | min | 351.655 | 11 | -421.811 | 3 | -292.939 | 7 | 0 | 1 | 0 | 1 | 0 | 1 |
| 31 | | J | max | 5859.464 | 7 | 139.136 | 11 | -2.976 | 13 | 0 | 13 | -24.304 | 13 | 3444.929 | 3 |
| 32 | | | min | 273.787 | 11 | -421.811 | 3 | -292.939 | 7 | 0 | 1 | -2392.435 | 7 | -1136.32 | 11 |
| 33 | M15 | I | max | 5991.829 | 7 | 139.139 | 11 | 293.174 | 7 | 0 | 13 | 0 | 13 | 0 | 13 |
| 34 | | | min | 351.759 | 11 | -421.796 | 3 | 2.82 | 13 | 0 | 1 | 0 | 1 | 0 | 1 |
| 35 | | J | max | 5862.047 | 7 | 139.139 | 11 | 293.174 | 7 | 0 | 13 | 2394.352 | 7 | 3444.811 | 3 |
| 36 | | | min | 273.89 | 11 | -421.796 | 3 | 2.82 | 13 | 0 | 1 | 23.034 | 13 | -1136.345 | 11 |
| 37 | M16 | I | max | 5625.089 | 3 | 474.342 | 6 | 487.301 | 3 | 0 | 13 | 0 | 13 | 0 | 13 |

***Envelope Member End Reactions (Continued)***

| | Member | Member End | | Axial[lb] | LC | y Shear[lb] | LC | z Shear[lb] | LC | Torque[lb-ft] | LC | y-y Moment[lb-ft] | LC | z-z Moment[lb-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | | | min | 526.656 | 11 | -488.632 | 13 | 37.936 | 11 | 0 | 1 | 0 | 1 | 0 | 1 |
| 39 | | J | max | 5495.307 | 3 | 474.342 | 6 | 487.301 | 3 | 0 | 13 | 3979.79 | 3 | 3990.659 | 13 |
| 40 | | | min | 448.787 | 11 | -488.632 | 13 | 37.936 | 11 | 0 | 1 | 309.819 | 11 | -3873.949 | 6 |
| 41 | M17 | I | max | 5624.012 | 3 | 561.956 | 7 | 246.1 | 3 | 0 | 13 | 0 | 13 | 0 | 13 |
| 42 | | | min | 701.596 | 11 | -77.295 | 13 | 20.848 | 10 | 0 | 1 | 0 | 1 | 0 | 1 |
| 43 | | J | max | 5494.23 | 3 | 561.956 | 7 | 246.1 | 3 | 0 | 13 | 2009.901 | 3 | 631.272 | 13 |
| 44 | | | min | 623.727 | 11 | -77.295 | 13 | 20.848 | 10 | 0 | 1 | 170.268 | 10 | -4589.494 | 7 |
| 45 | M18 | I | max | 5626.468 | 3 | 561.99 | 7 | -20.967 | 10 | 0 | 13 | 0 | 13 | 0 | 13 |
| 46 | | | min | 701.668 | 11 | -76.992 | 13 | -246.064 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 47 | | J | max | 5496.687 | 3 | 561.99 | 7 | -20.967 | 10 | 0 | 13 | -171.239 | 10 | 628.794 | 13 |
| 48 | | | min | 623.799 | 11 | -76.992 | 13 | -246.064 | 3 | 0 | 1 | -2009.609 | 3 | -4589.771 | 7 |
| 49 | M31 | I | max | 7471.721 | 3 | 400.232 | 3 | 10.601 | 11 | 817.468 | 6 | 624.023 | 13 | 315.34 | 3 |
| 50 | | | min | 657.933 | 11 | 68.35 | 11 | -3.334 | 13 | -842.031 | 13 | -605.807 | 6 | 104.28 | 11 |
| 51 | | J | max | 2863.094 | 7 | -94.078 | 11 | 57.253 | 6 | 180.359 | 6 | 43.147 | 11 | 2507.432 | 7 |
| 52 | | | min | 282.33 | 11 | -948.009 | 3 | -58.977 | 13 | -185.777 | 13 | -23.089 | 6 | 219.687 | 11 |
| 53 | M32 | I | max | 2998.678 | 7 | 948.656 | 3 | 32.924 | 10 | 242.158 | 6 | 3.955 | 12 | 2485.389 | 3 |
| 54 | | | min | 330.687 | 11 | -10.978 | 10 | -29.331 | 12 | -248.17 | 13 | -21.45 | 11 | 113.115 | 11 |
| 55 | | J | max | 7560.994 | 7 | -20.942 | 10 | 37.953 | 12 | 412.742 | 6 | 120.541 | 11 | 1519.97 | 6 |
| 56 | | | min | 834.707 | 11 | -399.713 | 3 | -38.351 | 10 | -422.952 | 13 | -42.264 | 13 | -1243.869 | 13 |
| 57 | M33 | I | max | 7560.487 | 7 | 399.698 | 3 | 37.483 | 10 | 423.557 | 13 | 120.39 | 11 | 1519.033 | 6 |
| 58 | | | min | 834.768 | 11 | 20.715 | 10 | -38.972 | 12 | -412.35 | 6 | -42.641 | 13 | -1244.522 | 13 |
| 59 | | J | max | 2998.873 | 7 | 10.91 | 10 | 36.368 | 12 | 248.461 | 13 | 5.061 | 12 | 2485.436 | 3 |
| 60 | | | min | 330.735 | 11 | -948.665 | 3 | -31.122 | 10 | -242.074 | 6 | -21.47 | 11 | 113.115 | 11 |
| 61 | M34 | I | max | 2863.734 | 7 | 962.65 | 7 | 62.224 | 12 | 185.914 | 12 | 43.151 | 11 | 2506.1 | 7 |
| 62 | | | min | 282.275 | 11 | 94.075 | 11 | -60.403 | 10 | -180.46 | 10 | -23.129 | 10 | 219.683 | 11 |
| 63 | | J | max | 7471.721 | 3 | -68.344 | 11 | 3.14 | 12 | 842.259 | 12 | 625.003 | 12 | 315.34 | 3 |
| 64 | | | min | 657.904 | 11 | -400.232 | 3 | -10.601 | 11 | -817.557 | 10 | -606.684 | 10 | 104.259 | 11 |
| 65 | M35 | I | max | 7471.542 | 3 | 503.871 | 7 | 37.882 | 6 | 424.692 | 12 | 120.404 | 11 | 1554.017 | 12 |
| 66 | | | min | 481.117 | 11 | -5.511 | 13 | -38.662 | 13 | -410.964 | 10 | -39.766 | 12 | -1199.661 | 10 |
| 67 | | J | max | 2845.367 | 3 | 86.341 | 13 | 32.698 | 13 | 249.268 | 12 | 4.173 | 13 | 2687.234 | 7 |
| 68 | | | min | 233.891 | 11 | -1237.266 | 7 | -35.921 | 6 | -241.068 | 10 | -21.48 | 11 | 326.507 | 11 |
| 69 | M36 | I | max | 7471.582 | 3 | 504.023 | 7 | 39.273 | 13 | 410.343 | 10 | 38.309 | 12 | 1554.724 | 12 |
| 70 | | | min | 481.059 | 11 | -5.338 | 13 | -36.616 | 6 | -424.805 | 12 | -120.306 | 11 | -1198.808 | 10 |
| 71 | | J | max | 2845.409 | 3 | 86.393 | 13 | 27.814 | 6 | 240.757 | 10 | 21.492 | 11 | 2685.561 | 7 |
| 72 | | | min | 233.845 | 11 | -1237.223 | 7 | -33.234 | 13 | -249.265 | 12 | -5.372 | 13 | 326.51 | 11 |
| 73 | M25 | I | max | 4130.787 | 7 | 936.687 | 7 | 159.889 | 10 | 0.067 | 6 | 0.123 | 3 | 1250.302 | 7 |
| 74 | | | min | 227.939 | 11 | 40.81 | 11 | -0.002 | 3 | 0.001 | 1 | -218.846 | 10 | 60.374 | 11 |
| 75 | | J | max | 4130.787 | 7 | -40.831 | 11 | 0 | 1 | 0.067 | 6 | 0.109 | 3 | 1251.202 | 7 |
| 76 | | | min | 227.939 | 11 | -937.423 | 7 | -159.896 | 6 | 0.001 | 1 | -218.521 | 10 | 60.398 | 11 |
| 77 | M26 | I | max | 4066.938 | 7 | 900.729 | 7 | 169.97 | 6 | 19.8 | 13 | 28.947 | 13 | 1087.19 | 3 |
| 78 | | | min | 243.571 | 11 | 14.901 | 11 | -9.018 | 13 | -19.122 | 6 | -252.1 | 6 | -47.052 | 11 |
| 79 | | J | max | 4066.938 | 7 | 5.481 | 13 | 0.022 | 3 | 19.8 | 13 | 0.029 | 3 | 1367.176 | 7 |
| 80 | | | min | 289.514 | 11 | -973.381 | 7 | -149.815 | 10 | -19.122 | 6 | -171.119 | 10 | -93.521 | 13 |
| 81 | M27 | I | max | 4099.737 | 7 | 810.959 | 3 | 129.726 | 13 | 19.715 | 12 | 27.311 | 11 | 1086.697 | 3 |
| 82 | | | min | 320.436 | 11 | 14.897 | 11 | -15.248 | 11 | -19.235 | 10 | -142.141 | 13 | -54.75 | 11 |
| 83 | | J | max | 4099.737 | 7 | -66.744 | 11 | 11.278 | 11 | 19.715 | 12 | 11.404 | 11 | 1087.793 | 3 |
| 84 | | | min | 366.379 | 11 | -811.673 | 3 | -150.492 | 12 | -19.235 | 10 | -225.518 | 12 | 87.958 | 1 |
| 85 | M28 | I | max | 4034.467 | 7 | 811.023 | 3 | 140.103 | 13 | 0.015 | 3 | 38.734 | 11 | 1086.396 | 3 |
| 86 | | | min | 382.056 | 11 | 40.81 | 11 | -26.518 | 11 | -0.06 | 10 | -190.944 | 13 | 45.075 | 11 |
| 87 | | J | max | 4034.467 | 7 | -40.83 | 11 | 26.534 | 11 | 0.015 | 3 | 38.739 | 11 | 1086.976 | 3 |
| 88 | | | min | 382.056 | 11 | -811.609 | 3 | -140.115 | 12 | -0.06 | 10 | -191.304 | 13 | 45.093 | 11 |
| 89 | M29 | I | max | 4098.396 | 7 | 811.08 | 3 | 150.429 | 12 | 19.099 | 10 | 11.402 | 11 | 1087.19 | 3 |
| 90 | | | min | 366.393 | 11 | 66.723 | 11 | -11.27 | 11 | -19.83 | 12 | -224.941 | 12 | 87.922 | 1 |
| 91 | | J | max | 4098.396 | 7 | -14.917 | 11 | 15.255 | 11 | 19.099 | 10 | 27.314 | 11 | 1087.31 | 3 |
| 92 | | | min | 320.449 | 11 | -811.551 | 3 | -129.789 | 13 | -19.83 | 12 | -142.694 | 13 | -54.729 | 11 |

### Envelope Member End Reactions (Continued)

| | Member | Member End | | Axial[lb] | LC | y Shear[lb] | LC | z Shear[lb] | LC | Torque[lb-ft] | LC | y-y Moment[lb-ft] | LC | z-z Moment[lb-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 93 | M30 | I | max | 4065.595 | 7 | 972.971 | 7 | 149.874 | 10 | 19.274 | 6 | 0.052 | 3 | 1367.818 | 7 |
| 94 | | | min | 289.528 | 11 | -5.225 | 13 | -0.027 | 3 | -19.696 | 13 | -171.698 | 10 | -92.172 | 13 |
| 95 | | J | max | 4065.595 | 7 | -14.922 | 11 | 8.945 | 13 | 19.274 | 6 | 28.667 | 13 | 1087.793 | 3 |
| 96 | | | min | 243.584 | 11 | -901.139 | 7 | -169.912 | 6 | -19.696 | 13 | -251.492 | 6 | -47.028 | 11 |
| 97 | M37 | I | max | -665.636 | 11 | 1343.27 | 3 | 226.321 | 13 | 0.114 | 3 | 125.81 | 11 | 3739.616 | 3 |
| 98 | | | min | -6504.738 | 7 | 82.257 | 11 | -43.049 | 11 | -0.043 | 10 | -661.003 | 13 | 213.78 | 11 |
| 99 | | J | max | -665.636 | 11 | -82.043 | 11 | 42.841 | 11 | 0.114 | 3 | 125.732 | 11 | 3739.164 | 3 |
| 100 | | | min | -6504.738 | 7 | -1337.314 | 3 | -227.352 | 12 | -0.043 | 10 | -660.885 | 13 | 213.757 | 11 |
| 101 | M38 | I | max | -577.821 | 11 | 1342.276 | 3 | 242.527 | 12 | 37.982 | 10 | 64.922 | 11 | 3866.183 | 7 |
| 102 | | | min | -6474.581 | 3 | 137.035 | 1 | -21.809 | 11 | -39.41 | 12 | -754.369 | 12 | 360.72 | 1 |
| 103 | | J | max | -652.204 | 11 | -14.396 | 11 | 21.136 | 11 | 37.982 | 10 | 59.993 | 11 | 3711.046 | 3 |
| 104 | | | min | -6474.581 | 3 | -1338.307 | 3 | -211.147 | 13 | -39.41 | 12 | -498.593 | 13 | -398.69 | 10 |
| 105 | M39 | I | max | -476.893 | 11 | 1636.302 | 7 | 243.671 | 10 | 38.308 | 6 | 0.336 | 3 | 4962.852 | 7 |
| 106 | | | min | -6474.555 | 3 | -36.512 | 13 | -0.058 | 3 | -39.157 | 13 | -596.967 | 10 | -705.544 | 13 |
| 107 | | J | max | -551.276 | 11 | -14.413 | 11 | 13.682 | 13 | 38.308 | 6 | 83.751 | 13 | 3714.763 | 3 |
| 108 | | | min | -6474.555 | 3 | -1451.425 | 7 | -274.062 | 6 | -39.157 | 13 | -845.506 | 6 | -323.312 | 11 |
| 109 | M40 | I | max | -463.43 | 11 | 1547.382 | 7 | 259.445 | 10 | 0.114 | 3 | 0.335 | 3 | 4295.653 | 7 |
| 110 | | | min | -6472.279 | 3 | 82.256 | 11 | -0.009 | 3 | 0.004 | 11 | -755.278 | 10 | 220.768 | 11 |
| 111 | | J | max | -463.43 | 11 | -82.044 | 11 | -0.001 | 1 | 0.114 | 3 | 0.196 | 3 | 4294.063 | 7 |
| 112 | | | min | -6472.279 | 3 | -1540.345 | 7 | -258.287 | 6 | 0.004 | 11 | -755.563 | 10 | 220.758 | 11 |
| 113 | M41 | I | max | -551.409 | 11 | 1455.63 | 7 | 274.786 | 6 | 39.213 | 13 | 84.329 | 13 | 3716.068 | 3 |
| 114 | | | min | -6474.581 | 3 | 14.537 | 11 | -13.732 | 13 | -38.279 | 6 | -845.731 | 6 | -323.27 | 11 |
| 115 | | J | max | -477.026 | 11 | 36.614 | 13 | 0.04 | 3 | 39.213 | 13 | 0.185 | 3 | 4960.107 | 7 |
| 116 | | | min | -6474.581 | 3 | -1632.098 | 7 | -242.947 | 10 | -38.279 | 6 | -596.419 | 10 | -705.399 | 13 |
| 117 | M42 | I | max | -652.335 | 11 | 1341.809 | 3 | 210.503 | 13 | 39.417 | 12 | 60.056 | 11 | 3712.309 | 3 |
| 118 | | | min | -6474.555 | 3 | 14.521 | 11 | -21.2 | 11 | -38.031 | 10 | -498.056 | 13 | -398.784 | 10 |
| 119 | | J | max | -577.952 | 11 | -136.826 | 1 | 21.745 | 11 | 39.417 | 12 | 64.869 | 11 | 3865.056 | 7 |
| 120 | | | min | -6474.555 | 3 | -1338.774 | 3 | -243.171 | 12 | -38.031 | 10 | -754.667 | 12 | 360.642 | 1 |

### Envelope AISC 9TH: ASD Member Steel Code Checks

| | Member | Shape | Code Check | Loc[ft] | LC | Shear Check | Loc[ft] | Dir | LC | Fa [psi] | Ft [psi] | Fb y-y [psi] | Fb z-z [psi] | Cb | Cmy | Cmz | ASD Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M7 | HSS6X4X2 | 0.007 | 2.108 | 7 | 0.003 | 2.108 | y | 7 | 26532.426 | 27600 | 27600 | 27600 | 1.75 | 0.85 | 0.85 | H2-1 |
| 2 | M8 | HSS6X4X2 | 0.007 | 2.108 | 7 | 0.003 | 2.108 | y | 7 | 26532.426 | 27600 | 27600 | 27600 | 1.75 | 0.85 | 0.85 | H2-1 |
| 3 | M9 | HSS6X4X2 | 0.006 | 2.108 | 7 | 0.003 | 2.108 | y | 7 | 26532.426 | 27600 | 27600 | 27600 | 1.75 | 0.85 | 0.85 | H2-1 |
| 4 | M10 | HSS6X4X2 | 0.006 | 2.108 | 3 | 0.003 | 2.108 | y | 3 | 26532.426 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.85 | H2-1 |
| 5 | M11 | HSS6X4X2 | 0.006 | 2.108 | 3 | 0.003 | 2.108 | y | 3 | 26532.426 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.85 | H2-1 |
| 6 | M12 | HSS6X4X2 | 0.006 | 2.108 | 7 | 0.003 | 2.108 | y | 7 | 26532.426 | 27600 | 27600 | 27600 | 1.75 | 0.85 | 0.85 | H2-1 |
| 7 | M13 | HSS7X7X3 | 0.332 | 8.167 | 7 | 0.011 | 8.167 | y | 12 | 24530.172 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.6 | H1-2 |
| 8 | M14 | HSS7X7X3 | 0.275 | 8.167 | 3 | 0.009 | 8.167 | y | 3 | 24211.698 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.6 | H1-2 |
| 9 | M15 | HSS7X7X3 | 0.275 | 8.167 | 3 | 0.009 | 8.167 | y | 3 | 24211.698 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.6 | H1-2 |
| 10 | M16 | HSS7X7X3 | 0.332 | 8.167 | 7 | 0.011 | 8.167 | y | 13 | 24530.172 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.6 | H1-2 |
| 11 | M17 | HSS7X7X3 | 0.302 | 8.167 | 7 | 0.013 | 8.167 | y | 7 | 24211.698 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.6 | H1-2 |
| 12 | M18 | HSS7X7X3 | 0.302 | 8.167 | 7 | 0.013 | 8.167 | y | 7 | 24211.698 | 27600 | 27600 | 27600 | 1.75 | 0.6 | 0.6 | H1-2 |
| 13 | M31 | HSS8X6X3 | 0.162 | 7.155 | 7 | 0.038 | 0 | y | 12 | 17367.47 | 27600 | 27600 | 27600 | 1.629 | 0.85 | 0.85 | H1-1 |
| 14 | M32 | HSS8X6X3 | 0.15 | 8.518 | 12 | 0.025 | 0 | y | 12 | 17367.47 | 27600 | 27600 | 27600 | 1 | 0.85 | 0.85 | H1-2 |
| 15 | M33 | HSS8X6X3 | 0.149 | 8.348 | 12 | 0.025 | 16.865 | y | 12 | 17367.47 | 27600 | 27600 | 27600 | 1 | 0.85 | 0.85 | H1-2 |
| 16 | M34 | HSS8X6X3 | 0.162 | 9.881 | 7 | 0.038 | 16.865 | y | 12 | 17367.47 | 27600 | 27600 | 27600 | 1.63 | 0.85 | 0.85 | H1-1 |
| 17 | M35 | HSS8X6X3 | 0.211 | 8.348 | 7 | 0.032 | 16.865 | y | 7 | 17367.47 | 27600 | 27600 | 27600 | 1 | 0.85 | 0.85 | H1-1 |
| 18 | M36 | HSS8X6X3 | 0.212 | 8.348 | 7 | 0.032 | 16.865 | y | 7 | 17367.47 | 27600 | 27600 | 27600 | 1 | 0.85 | 0.85 | H1-1 |
| 19 | M25 | HSS4X3X2 | 0.475 | 8 | 7 | 0.055 | 8 | y | 7 | 18244.23 | 27600 | 27600 | 27600 | 1 | 0.85 | 0.85 | H1-1 |
| 20 | M26 | HSS4X3X2 | 0.489 | 8 | 7 | 0.061 | 8 | y | 7 | 18244.23 | 27600 | 27600 | 27600 | 1.108 | 0.85 | 0.85 | H1-1 |
| 21 | M27 | HSS4X3X2 | 0.392 | 8 | 7 | 0.048 | 8 | y | 3 | 18244.23 | 27600 | 27600 | 27600 | 1.143 | 0.85 | 0.85 | H1-1 |
| 22 | M28 | HSS4X3X2 | 0.386 | 8 | 3 | 0.048 | 8 | y | 3 | 18244.23 | 27600 | 27600 | 27600 | 1 | 0.6 | 0.85 | H1-1 |
| 23 | M29 | HSS4X3X2 | 0.392 | 0 | 7 | 0.048 | 8 | y | 3 | 18244.23 | 27600 | 27600 | 27600 | 1.141 | 0.85 | 0.85 | H1-1 |
| 24 | M30 | HSS4X3X2 | 0.489 | 0 | 7 | 0.061 | 0 | y | 7 | 18244.23 | 27600 | 27600 | 27600 | 1.109 | 0.85 | 0.85 | H1-1 |

### *Envelope AISC 9TH: ASD Member Steel Code Checks (Continued)*

| | Member | Shape | Code Check | Loc[ft] | LC | Shear Check | Loc[ft] | Dir | LC | Fa [psi] | Ft [psi] | Fb y-y [psi] | Fb z-z [psi] | Cb | Cmy | Cmz | ASD Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | M37 | HSS6X4X2 | 0.533 | 0 | 3 | 0.052 | 0 | y | 3 | 11171.694 | 27600 | 27600 | 27600 | 1 | 0.6 | 0.85 | H2-1 |
| 26 | M38 | HSS6X4X2 | 0.55 | 0 | 7 | 0.052 | 0 | y | 3 | 11171.694 | 27600 | 27600 | 27600 | 1.212 | 0.85 | 0.85 | H2-1 |
| 27 | M39 | HSS6X4X2 | 0.73 | 0 | 7 | 0.067 | 0 | y | 7 | 11171.694 | 27600 | 27600 | 27600 | 1.157 | 0.85 | 0.85 | H2-1 |
| 28 | M40 | HSS6X4X2 | 0.668 | 0 | 7 | 0.06 | 0 | y | 7 | 11171.694 | 27600 | 27600 | 27600 | 1 | 0.85 | 0.85 | H2-1 |
| 29 | M41 | HSS6X4X2 | 0.729 | 16 | 7 | 0.067 | 16 | y | 7 | 11171.694 | 27600 | 27600 | 27600 | 1.156 | 0.85 | 0.85 | H2-1 |
| 30 | M42 | HSS6X4X2 | 0.55 | 16 | 7 | 0.052 | 0 | y | 3 | 11171.694 | 27600 | 27600 | 27600 | 1.211 | 0.85 | 0.85 | H2-1 |

### *Material Take-Off*

| | Material | Size | Pieces | Length[ft] | Weight[LB] |
|---|---|---|---|---|---|
| 1 | Hot Rolled Steel | | | | |
| 2 | A500 Gr.46 | HSS4X3X2 | 6 | 48 | 251.533 |
| 3 | A500 Gr.46 | HSS6X4X2 | 12 | 108.6 | 824.455 |
| 4 | A500 Gr.46 | HSS7X7X3 | 6 | 49 | 778.689 |
| 5 | A500 Gr.46 | HSS8X6X3 | 6 | 101.2 | 1608.043 |
| 6 | Total HR Steel | | 30 | 306.8 | 3462.721 |

AMMTEC PLLC CONSULTANTS

| | | | |
|---|---|---|---|
| CLIENT: | CRS 23160 | Prepared By: | AA |
| PROJECT: | Reed Park 36' x 36' Charleston Model | Checked By: | MJK |
| | Fruita, CO | Date: | 10/05/23 |

**Main Beam M30 : Moment Couple from Risa Calculation**

| | | | |
|---|---|---|---|
| **Beam Depth =** | 8 | inches | |
| **Mu(resultant) conservative =** | 1.37 | ft-kips | |
| d = | 6.75 | inches | |
| Bolt Pairs= | 1 | | |
| Top Bolt Force = | 2.4 | kips | |
| Bolt Dia (in): 5/8 | A307 | | OK |
| **Rn/W =** | 6.1 | kips | |

Per Beam Ring Shear Loading= 0.97 kips

| Checked Combined Loading | | Bolt Area (in^2) |
|---|---|---|
| Shear check (ksi) | | 0.3068 |
| fv=Pv/Ab = | 3.162 | |
| Tension Check (ksi) | | |
| ft=Pt/Ab = | 7.92 | |
| Ft' = 26-1.8*fv <20 | 20.00 | |
| If F't > ft then OK | OK | |

**erimeter Beam M41 : Moment Couple from Risa Calculation**

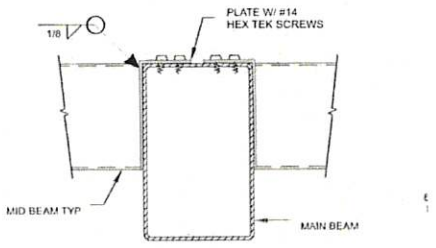
| | | | |
|---|---|---|---|
| **Beam Depth =** | 6 | inches | |
| **Mu(resultant) conservative =** | 4.96 | ft-kips | |
| d = | 4.75 | inches | |
| Bolt Pairs= | 1 | | |
| Top Bolt Force = | 12.5 | kips | |
| Bolt Dia (in): 5/8 | A325 | | OK |
| **Rn/W =** | 13.5 | kips | |

Per Beam Ring Shear Loading= 1.45 kips

| Checked Combined Loading | | Bolt Area (in^2) |
|---|---|---|
| Shear check (ksi) | | 0.3068 |
| fv=Pv/Ab = | 4.726 | |
| Tension Check (ksi) | | |
| ft=Pt/Ab = | 40.84 | |
| F't = (44^2-4.39*fv^2)^.5 = | 42.87 | |
| If F't > ft then OK | OK | |

**Alt TEK / Plate Connection @ Top of Mid Beam M26**

| | | |
|---|---|---|
| $Mu_{(resultant)}$ = | 1.36 | ft-kips |
| d = | 4.0 | inches |
| Moment Couple Shear @ Top = | 4.1 | kips |
| #14 TEK $\nu u$ = | 2.65 | kips |
| Required - Use | 3 | #14 TEK |



AMMTEC PLLC CONSULTANTS

| | | | |
|---|---|---|---|
| CLIENT: | CRS 23160 | Prepared By: | AA |
| PROJECT: | Reed Park 36' x 36' Charleston Model | Checked By: | MJK |
| | Fruita, CO | Date: | 09/29/23 |

## Vertical Column

| | | |
|---|---|---|
| **Height of Column =** | 8.17 | ft |
| **Max Moment at Top of Footing =** | 0.01 | kip-ft |
| **Max Vert / Column =** | 5,991 | lbs |
| **Total Pole Uplift / Column =** | 100 | lbs |

## Soil / Foundation (Spread)

| | | |
|---|---|---|
| Allowable Bearing Capacity = B = | 1,000 | psf |
| kp = | 200 | psf/ft |
| Ms = | $(w*L^2/2*h_3*150)+F*w*h_3*L$ | |
| Ms = | 3.04 | kip-ft |
| $M_{resultant}$ = | 0.01 | kip-ft |
| $FS_{overturning}$ = | 1.50 | [ FS Actual =303.75 ] |
| Check Overturning | OK | |
| Fnd Wt = | 2,025 | lbs |
| CMU Clmn Wt = | - | lbs |
| Bearing Pressure= | 665.6666667 | psf |
| | OK | |

**Dimensions of Spread Foundation**

| | | |
|---|---|---|
| $h_3$ = | 1.50 | ft (=18") |
| Length = L = | 36 | inches |
| Min Side = w = | 36 | inches |

| | | |
|---|---|---|
| With CMU Surround | n | |
| $FS_{uplift}$ = | 1.2 | [ FS Actual =12 |
| Pole Uplift = | 100 | |
| Friction Resistance= | - | |
| Ttl Fnd Uplift Resistance= | 2,025 | lbs |
| Check Dead Wt Uplift | OK | |

## Soil / Foundation - (Pier)

| | | |
|---|---|---|
| Allowable Bearing Capacity = B = | 1,000 | psf |
| kp = | 200 | psf/ft |
| Footing Type = | Unconstrained | |

**Dimensions of Pier Foundation**

| | | |
|---|---|---|
| Embedment Depth = d = | 4 | ft (=48") |
| Min Diameter = b = | 24 | inches |

| | | |
|---|---|---|
| Fnd Wt = | 1,885 | lbs |
| End Bearing = | 1,907 | psf/ft |
| CMU Clmn Wt = | - | lbs |
| Total Wt = | 3,792 | lbs |
| | OK | |

**Bearing by Skin Friction Reference Braja M.Das**

| | | |
|---|---|---|
| Assumed Cohesion Ph= | 100 | psf |
| Strength of soil = tan (27 degrees)*45*h^2/2 | 183 | |
| Skin Friction psf = | 283 | psf |
| Perimeter = 2(3.14)*r | 6 | ft |
| Skin Friction resistance*/1.1(F.S.) lbs = | 6,476 | lbs |
| Friction Resistance | OK | |

**Constrained Lateral Resistance**

d = sqrt(4.25*(Mg/(S3*b)) [IBC Eq 18-3]

= 0.12 ft

Check OK

where

s3 = 1,600

**Unconstrained Lateral Resistance**

d = 0.5*A*{1+[1+(4.36*h/A)]^1/2} [IBC Eq 18-1]

= 0.16 ft

Check OK

where

A = 2.34*P/(S1*b) = 0.00

P = M/h1 = 1 lb

S1 = 2*kb*d/3 = 533 psf

**AMMTEC CONSULTANTS**

| | | | |
|---|---|---|---|
| CLIENT: | CRS 23160 | Prepared By: | AA |
| PROJECT: | Reed Park 36' x 36' Charleston Model | Checked By: | MJK |
| | Fruita, CO | Date: | 09/29/23 |

**USGS–Provided Output**

Fruita, CO

| | | | | | |
|---|---|---|---|---|---|
| $S_S$ = | 0.235 | $S_{MS}$ = | 0.376 | $S_{DS}$ = | 0.251 |
| $S_1$ = | 0.066 | $S_{M1}$ = | 0.158 | $S_{D1}$ = | 0.106 |

IBC 2018 Seismic Design Requirements - Equivalent Lateral Force Procedure

**IBC/CBC Section 1613 Earthquake Loads**

| | | | REFERENCE |
|---|---|---|---|
| **Risk Category** | II | | ASCE 7-16 Table 1.5-1 [4] |
| **Importance Factor** = | 1.0 | | ASCE 7-16 Table 1.5-2 [5] |

**Site Classification**

Soil Site Class = D — ASCE 7-16 Table 20.3-1 [204]

**Site Coefficients**

| | | | |
|---|---|---|---|
| Ss = = | 0.235 | Mapped Spectral Accelerations: Short Period | ASCE 7-16 [210-223] or USGS Mapping |
| S1 = = | 0.066 | Mapped Sectral Accelerations: 1 sec Period | ASCE 7-16 [210-223] or USGS Mapping |
| Fa = = | 1.600 | Site Coefficient | ASCE 7-16 Table 11.4-1 [84] |
| Fv = = | 2.4 | Site Coefficient | ASCE 7-16 Table 11.4-2 [84] |
| SMS = | 0.376 | Max Spectral Accelerations: Short Periods | ASCE 7-16 Equ (11.4-1) [84] |
| SM1 = | 0.158 | Max Spectral Accelerations: 1sec Period | ASCE 7-16 Equ (11.4-2) [84] |

**Design Spectral Response Acceleration Parameters**

| | | | |
|---|---|---|---|
| SDS = | 0.251 | 5% Damped Spectral Acceleration: Short Period | ASCE 7-16 Equ (11.4-3) [84] |
| SD1 = | 0.106 | 5% Damped Spectral Acceleration: 1 sec Period | ASCE 7-16 Equ (11.4-4) [84] |
| SDC = | B | Seismic Design Category | ASCE 7-16 Tables 11.6-1 and 2 [85] |

**Equivalent Lateral Force Procedure**

| | | | | |
|---|---|---|---|---|
| $T_a$ = | $C_t h_n^x$ = | 0.177 | Fundamental Period | ASCE 7-16 Equ 12.8-7 [102] |
| | $C_t$ = | 0.028 | Period Parameter | ASCE 7-16 Tables 12.8-2 [102] |
| | x = | 0.800 | Period Parameter | ASCE 7-16 Tables 12.8-2 [102] |
| | $h_n$ = | 10.0 | Structure Height | |
| R[a] = | | 1.250 | Response Modification Factor | ASCE 7-16 Tables 12.2-1 [90-92] |
| TL = | | 12.000 | Long-Period Transition Period | ASCE 7-16 Figure 22-12 [225-227] |
| Cs = | SDS/[R/I] = | 0.201 | Seismic Response Coefficient | ASCE 7-16 Equ 12.8-2 [101] |
| where; | | | | |
| Cs > | | 0.100 | Lower Limit | ASCE 7-16 Equ 12.8-5 [101] |
| Cs > | 0.5 S1/[R/I] = | 0.026 | Lower Limit for $S_1 > 0.6g$ | ASCE 7-16 Equ 12.8-2 [101] |
| Cs < | SD1/T[R/I] = | 0.478 | Upper Limit for $T \leq T_L$ | ASCE 7-16 Equ 12.8-3 [101] |
| Cs < | SD1TL/T^2[R/I] = | 32.480 | Upper Limit for $T > T_L$ | ASCE 7-16 Equ 12.8-4 [101] |
| | Design Value Cs = | 0.201 | | |
| W = | | 8.3 | Total Dead Load and Snow Load (kips) | |
| Ωo= | | 1.250 | | ASCE 7-16 Tables 12.2-1 [90-92] |
| Emh = | CsWΩo = | 2.08 | Equivalent Seismic Base Shear (kips) | ASCE 7-16 Equ 12.8-7 [99] |
| | | 1.61 | Equivalent Seismic Load (psf) | |
| Ev = | .2SDS*D = | 0.416 | | ASCE 7-16 Equ 12.4-4a [99] |
| Em = | Emh + Ev = | 2.499 | | ASCE 7-16 Equ 12.4-1 [98] |
| | Fwind = | 3.731 | Unfactored Horizontal Wind Base Shear (kips) : | |

**Lateral Wind Shear > Seismic Base Shear : Wind Controls Design**

⚠ This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

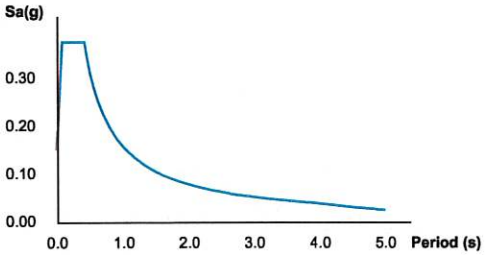
ℹ The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

# ATC Hazards by Location

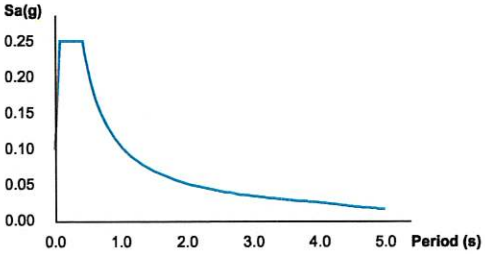
## Search Information

| | |
|---|---|
| **Address:** | Fruita, CO 81521, USA |
| **Coordinates:** | 39.1588696, -108.7289882 |
| **Elevation:** | 4508 ft |
| **Timestamp:** | 2023-09-29T23:34:01.368Z |
| **Hazard Type:** | Seismic |
| **Reference Document:** | ASCE7-16 |
| **Risk Category:** | II |
| **Site Class:** | D-default |


### MCER Horizontal Response Spectrum




### Design Horizontal Response Spectrum




## Basic Parameters

| Name | Value | Description |
|---|---|---|
| $S_S$ | 0.235 | $MCE_R$ ground motion (period=0.2s) |
| $S_1$ | 0.066 | $MCE_R$ ground motion (period=1.0s) |
| $S_{MS}$ | 0.376 | Site-modified spectral acceleration value |
| $S_{M1}$ | 0.157 | Site-modified spectral acceleration value |
| $S_{DS}$ | 0.251 | Numeric seismic design value at 0.2s SA |
| $S_{D1}$ | 0.105 | Numeric seismic design value at 1.0s SA |

## ▾Additional Information

| Name | Value | Description |
|---|---|---|
| SDC | B | Seismic design category |
| $F_a$ | 1.6 | Site amplification factor at 0.2s |
| $F_v$ | 2.4 | Site amplification factor at 1.0s |
| $CR_S$ | 0.945 | Coefficient of risk (0.2s) |
| $CR_1$ | 0.933 | Coefficient of risk (1.0s) |
| PGA | 0.129 | $MCE_G$ peak ground acceleration |
| $F_{PGA}$ | 1.541 | Site amplification factor at PGA |
| $PGA_M$ | 0.199 | Site modified peak ground acceleration |
| $T_L$ | 4 | Long-period transition period (s) |
| SsRT | 0.235 | Probabilistic risk-targeted ground motion (0.2s) |
| SsUH | 0.249 | Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years) |
| SsD | 1.5 | Factored deterministic acceleration value (0.2s) |
| S1RT | 0.066 | Probabilistic risk-targeted ground motion (1.0s) |
| S1UH | 0.07 | Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years) |

| | | |
|---|---|---|
| S1D | 0.6 | Factored deterministic acceleration value (1.0s) |
| PGAd | 0.5 | Factored deterministic acceleration value (PGA) |

*The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.*

*Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.*

## Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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| | | | |
|---|---|---|---|
| Company: | | Date: | 2/2/2023 |
| Engineer: | | Page: | 1/6 |
| Project: | | | |
| Address: | | | |
| Phone: | | | |
| E-mail: | | | |

## 1.Project information

Customer company:
Customer contact name:
Customer e-mail:
Comment:

Project description:
Location:
Fastening description:

## 2. Input Data & Anchor Parameters

**General**
Design method:ACI 318-14
Units: Imperial units

**Anchor Information:**
Anchor type: Cast-in-place
Material: F1554 Grade 36
Diameter (inch): 0.625
Effective Embedment depth, $h_{ef}$ (inch): 12.000
Anchor category: -
Anchor ductility: Yes
$h_{min}$ (inch): 13.38
$C_{min}$ (inch): 3.75
$S_{min}$ (inch): 3.75

**Base Material**
Concrete: Normal-weight
Concrete thickness, h (inch): 48.00
State: Uncracked
Compressive strength, $f'_c$ (psi): 2500
$\Psi_{c,V}$: 1.4
Reinforcement condition: B tension, B shear
Supplemental reinforcement: No
Reinforcement provided at corners: No
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: No
Ignore 6do requirement: No
Build-up grout pad: No

**Base Plate**
Length x Width x Thickness (inch): 8.00 x 8.00 x 0.50
Yield stress: 36000 psi

**Profile type/size**: HSS7X7X3/16

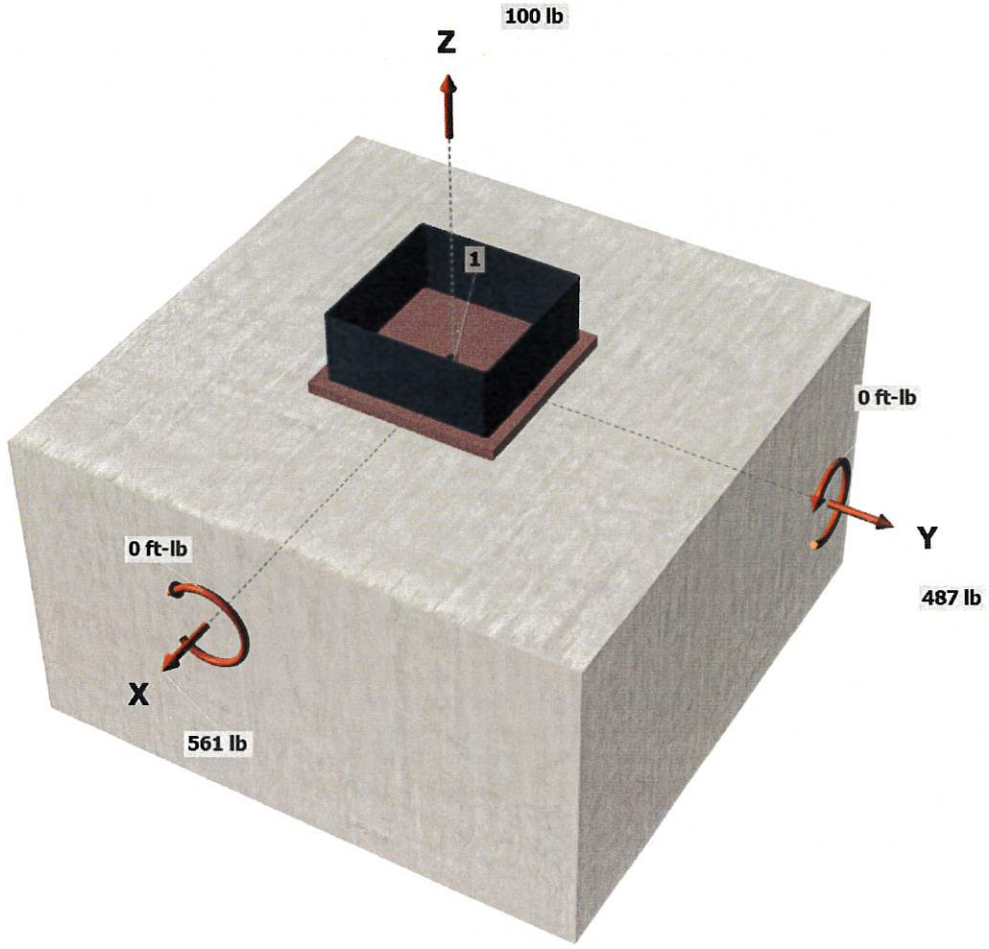
**Recommended Anchor**
Anchor Name: Heavy Hex Bolt - 5/8"Ø Heavy Hex Bolt, F1554 Gr. 36

**Load and Geometry**
Load factor source: ACI 318 Section 5.3
Load combination: not set
Seismic design: No
Anchors subjected to sustained tension: Not applicable
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: No

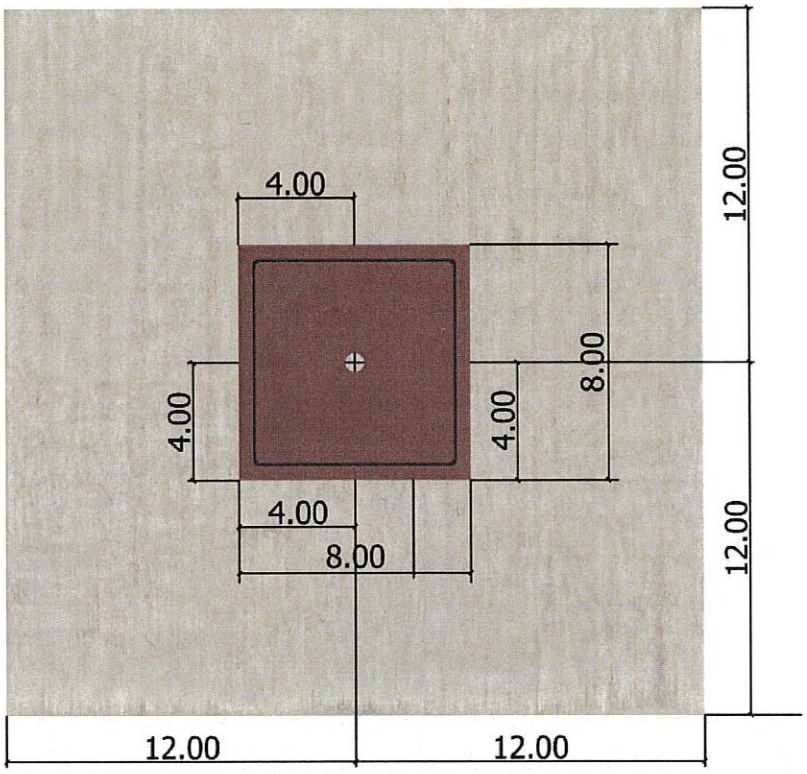
Strength level loads:

$N_{ua}$ [lb]: 100
$V_{uax}$ [lb]: 561
$V_{uay}$ [lb]: 487
$M_{ux}$ [ft-lb]: 0
$M_{uy}$ [ft-lb]: 0

<Figure 1>



<Figure 2>

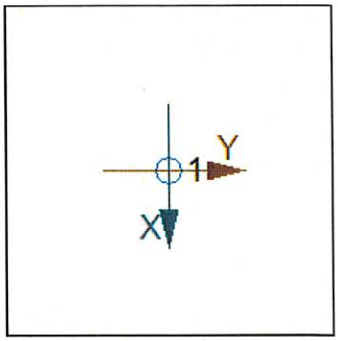


## 3. Resulting Anchor Forces

| Anchor | Tension load, $N_{ua}$ (lb) | Shear load x, $V_{uax}$ (lb) | Shear load y, $V_{uay}$ (lb) | Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb) |
|---|---|---|---|---|
| 1 | 100.0 | 561.0 | 487.0 | 742.9 |
| Sum | 100.0 | 561.0 | 487.0 | 742.9 |

Maximum concrete compression strain (‰): 0.00
Maximum concrete compression stress (psi): 0
Resultant tension force (lb): 100
Resultant compression force (lb): 0
Eccentricity of resultant tension forces in x-axis, $e'_{Nx}$ (inch): 0.00
Eccentricity of resultant tension forces in y-axis, $e'_{Ny}$ (inch): 0.00
Eccentricity of resultant shear forces in x-axis, $e'_{Vx}$ (inch): 0.00
Eccentricity of resultant shear forces in y-axis, $e'_{Vy}$ (inch): 0.00

<Figure 3>




## 4. Steel Strength of Anchor in Tension (Sec. 17.4.1)

| $N_{sa}$ (lb) | $\phi$ | $\phi N_{sa}$ (lb) |
|---|---|---|
| 13100 | 0.75 | 9825 |

## 5. Concrete Breakout Strength of Anchor in Tension (Sec. 17.4.2)

$N_b = 16\lambda_a\sqrt{f'_c}h_{ef}^{5/3}$ (Eq. 17.4.2.2b)

| $\lambda_a$ | $f'_c$ (psi) | $h_{ef}$ (in) | $N_b$ (lb) |
|---|---|---|---|
| 1.00 | 2500 | 8.000 | 25600 |

$\phi N_{cb} = \phi\,(A_{Nc}/A_{Nco})\,\Psi_{ed,N}\,\Psi_{c,N}\,\Psi_{cp,N}N_b$ (Sec. 17.3.1 & Eq. 17.4.2.1a)

| $A_{Nc}$ (in²) | $A_{Nco}$ (in²) | $c_{a,min}$ (in) | $\Psi_{ed,N}$ | $\Psi_{c,N}$ | $\Psi_{cp,N}$ | $N_b$ (lb) | $\phi$ | $\phi N_{cb}$ (lb) |
|---|---|---|---|---|---|---|---|---|
| 576.00 | 576.00 | 12.00 | 1.000 | 1.25 | 1.000 | 25600 | 0.70 | 22400 |

## 6. Pullout Strength of Anchor in Tension (Sec. 17.4.3)

$\phi N_{pn} = \phi\Psi_{c,P}N_p = \phi\Psi_{c,P}8A_{brg}f'_c$ (Sec. 17.3.1, Eq. 17.4.3.1 & 17.4.3.4)

| $\Psi_{c,P}$ | $A_{brg}$ (in²) | $f'_c$ (psi) | $\phi$ | $\phi N_{pn}$ (lb) |
|---|---|---|---|---|
| 1.4 | 0.67 | 2500 | 0.70 | 13152 |

## 8. Steel Strength of Anchor in Shear (Sec. 17.5.1)

| $V_{sa}$ (lb) | $\phi_{grout}$ | $\phi$ | $\phi_{grout}\phi V_{sa}$ (lb) |
|---|---|---|---|
| 7865 | 1.0 | 0.65 | 5112 |

## 9. Concrete Breakout Strength of Anchor in Shear (Sec. 17.5.2)

***Shear perpendicular to edge in y-direction:***

$V_{by} = \min|7(l_e / d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.5.2.2a & Eq. 17.5.2.2b)

| $l_e$ (in) | $d_a$ (in) | $\lambda_a$ | $f'_c$ (psi) | $c_{a1}$ (in) | $V_{by}$ (lb) |
|---|---|---|---|---|---|
| 5.00 | 0.625 | 1.00 | 2500 | 12.00 | 17434 |

$\phi V_{cby} = \phi\,(A_{Vc} / A_{Vco})\,\Psi_{ed,V}\Psi_{c,V}\Psi_{h,V}V_{by}$ (Sec. 17.3.1 & Eq. 17.5.2.1a)

| $A_{Vc}$ (in²) | $A_{Vco}$ (in²) | $\Psi_{ed,V}$ | $\Psi_{c,V}$ | $\Psi_{h,V}$ | $V_{by}$ (lb) | $\phi$ | $\phi V_{cby}$ (lb) |
|---|---|---|---|---|---|---|---|
| 432.00 | 648.00 | 0.900 | 1.400 | 1.000 | 17434 | 0.70 | 10251 |

***Shear perpendicular to edge in x-direction:***

$V_{bx} = \min|7(l_e / d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.5.2.2a & Eq. 17.5.2.2b)

| $l_e$ (in) | $d_a$ (in) | $\lambda_a$ | $f'_c$ (psi) | $c_{a1}$ (in) | $V_{bx}$ (lb) |
|---|---|---|---|---|---|
| 5.00 | 0.625 | 1.00 | 2500 | 12.00 | 17434 |

$\phi V_{cbx} = \phi\,(A_{Vc} / A_{Vco})\,\Psi_{ed,V}\Psi_{c,V}\Psi_{h,V}V_{bx}$ (Sec. 17.3.1 & Eq. 17.5.2.1a)

| $A_{Vc}$ (in²) | $A_{Vco}$ (in²) | $\Psi_{ed,V}$ | $\Psi_{c,V}$ | $\Psi_{h,V}$ | $V_{bx}$ (lb) | $\phi$ | $\phi V_{cbx}$ (lb) |
|---|---|---|---|---|---|---|---|
| 432.00 | 648.00 | 0.900 | 1.400 | 1.000 | 17434 | 0.70 | 10251 |

***Shear parallel to edge in x-direction:***

$V_{by} = \min|7(l_e / d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.5.2.2a & Eq. 17.5.2.2b)

| $l_e$ (in) | $d_a$ (in) | $\lambda_a$ | $f'_c$ (psi) | $c_{a1}$ (in) | $V_{by}$ (lb) |
|---|---|---|---|---|---|
| 5.00 | 0.625 | 1.00 | 2500 | 12.00 | 17434 |

$\phi V_{cbx} = \phi\,(2)(A_{Vc} / A_{Vco})\,\Psi_{ed,V}\Psi_{c,V}\Psi_{h,V}V_{by}$ (Sec. 17.3.1, 17.5.2.1(c) & Eq. 17.5.2.1a)

| $A_{Vc}$ (in²) | $A_{Vco}$ (in²) | $\Psi_{ed,V}$ | $\Psi_{c,V}$ | $\Psi_{h,V}$ | $V_{by}$ (lb) | $\phi$ | $\phi V_{cbx}$ (lb) |
|---|---|---|---|---|---|---|---|
| 432.00 | 648.00 | 1.000 | 1.400 | 1.000 | 17434 | 0.70 | 22780 |

***Shear parallel to edge in y-direction:***

$V_{bx} = \min|7(l_e / d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.5.2.2a & Eq. 17.5.2.2b)

| $l_e$ (in) | $d_a$ (in) | $\lambda_a$ | $f'_c$ (psi) | $c_{a1}$ (in) | $V_{bx}$ (lb) |
|---|---|---|---|---|---|
| 5.00 | 0.625 | 1.00 | 2500 | 12.00 | 17434 |

$\phi V_{cby} = \phi\,(2)(A_{Vc} / A_{Vco})\,\Psi_{ed,V}\Psi_{c,V}\Psi_{h,V}V_{bx}$ (Sec. 17.3.1, 17.5.2.1(c) & Eq. 17.5.2.1a)

| $A_{Vc}$ (in²) | $A_{Vco}$ (in²) | $\Psi_{ed,V}$ | $\Psi_{c,V}$ | $\Psi_{h,V}$ | $V_{bx}$ (lb) | $\phi$ | $\phi V_{cby}$ (lb) |
|---|---|---|---|---|---|---|---|
| 432.00 | 648.00 | 1.000 | 1.400 | 1.000 | 17434 | 0.70 | 22780 |

## 10. Concrete Pryout Strength of Anchor in Shear (Sec. 17.5.3)

$\phi V_{cp} = \phi k_{cp} N_{cb} = \phi k_{cp}(A_{Nc} / A_{Nco})\,\Psi_{ed,N}\Psi_{c,N}\Psi_{cp,N}N_b$ (Sec. 17.3.1 & Eq. 17.5.3.1a)

| $k_{cp}$ | $A_{Nc}$ (in²) | $A_{Nco}$ (in²) | $\Psi_{ed,N}$ | $\Psi_{c,N}$ | $\Psi_{cp,N}$ | $N_b$ (lb) | $\phi$ | $\phi V_{cp}$ (lb) |
|---|---|---|---|---|---|---|---|---|
| 2.0 | 576.00 | 576.00 | 1.000 | 1.250 | 1.000 | 25600 | 0.70 | 44800 |

## 11. Results

### Interaction of Tensile and Shear Forces (Sec. 17.6.)

| Tension | Factored Load, $N_{ua}$ (lb) | Design Strength, $\phi N_n$ (lb) | Ratio | Status |
|---|---|---|---|---|
| **Steel** | **100** | **9825** | **0.01** | **Pass (Governs)** |
| Concrete breakout | 100 | 22400 | 0.00 | Pass |
| Pullout | 100 | 13152 | 0.01 | Pass |

| Shear | Factored Load, $V_{ua}$ (lb) | Design Strength, $\phi V_n$ (lb) | Ratio | Status |
|---|---|---|---|---|
| **Steel** | **743** | **5112** | **0.15** | **Pass (Governs)** |
| T Concrete breakout y+ | 487 | 10251 | 0.05 | Pass |
| T Concrete breakout x+ | 561 | 10251 | 0.05 | Pass |
| \|\| Concrete breakout x- | 487 | 22780 | 0.02 | Pass |
| \|\| Concrete breakout y+ | 561 | 22780 | 0.02 | Pass |
| Concrete breakout, combined | - | - | 0.07 | Pass |
| Pryout | 743 | 44800 | 0.02 | Pass |

| Interaction check | $N_{ua}/\phi N_n$ | $V_{ua}/\phi V_n$ | Combined Ratio | Permissible | Status |
|---|---|---|---|---|---|
| Sec. 17.6..2 | 0.00 | 0.15 | 14.5% | 1.0 | Pass |

**5/8"Ø Heavy Hex Bolt, F1554 Gr. 36 with hef = 12.000 inch meets the selected design criteria.**

## 12. Warnings

- Designer must exercise own judgement to determine if this design is suitable.

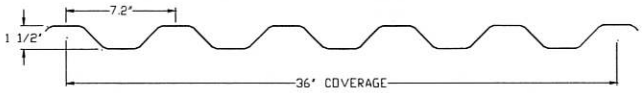
McELROY METAL
CORPORATE OFFICE • P.O. BOX 1148 • SHREVEPORT, LA 71163-1148 • (318) 747-8000 • FAX (318) 747-8029

# TECHNICAL BULLETIN

**Issue Date : June 1, 2006** **Revised : August 29, 2011** **No. 07-213-06**

## Mega-Rib

**Bare & Painted**




| SECTION PROPERTIES | | | | | | TOP IN COMPRESSION | | | BOTTOM IN COMPRESSION | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GAUGE | FY (ksi) | WEIGHT (psf) | $V_a$ (kip/ft.) | $P_{a\_end}$ (lbs/ft.) | $P_{a\_int}$ (lbs/ft.) | $I_x$ ($in.^4$/ft.) | $S_e$ ($in.^3$/ft.) | $M_a$ (kip-in./ft.) | $I_x$ ($in.^4$/ft.) | $S_e$ ($in.^3$/ft.) | $M_a$ (kip-in./ft.) |
| 24 | 50.0 | 1.17 | 1.2160 | 214.67 | 576.44 | 0.0970 | 0.1215 | 3.6370 | 0.0970 | 0.1126 | 3.3700 |

1. Section properties are calculated in accordance with the 2007 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Va is the allowable shear.
3. Pa is the allowable load for web crippling on end & interior supports.
4. Ix is for deflection determination.
5. Se is for bending.
6. Ma is the allowable bending moment.
7. All values are for one foot of panel width.

## Allowable Uniform Loads (PSF)

| | | Span in Feet | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Span Type | Load Type | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 | 9.00 | 9.50 | 10.00 | 10.50 | 11.00 |
| Single | Positive Wind | 197 | 151 | 119 | 96 | 80 | 67 | 57 | 49 | 43 | 37 | 33 | 29 | 26 | 24 | 21 | 20 |
| | Negative Wind | 183 | 140 | 110 | 89 | 74 | 62 | 53 | 45 | 39 | 35 | 31 | 27 | 24 | 22 | 20 | 18 |
| | Live | 197 | 151 | 119 | 96 | 80 | 67 | 57 | 49 | 43 | 37 | 33 | 29 | 26 | 24 | 21 | 20 |
| | Deflection (L/180) | 197 | 132 | 93 | 67 | 50 | 39 | 30 | 24 | 20 | 16 | 13 | 11 | 9 | 8 | 7 | 6 |
| | Deflection (L/240) | 148 | 99 | 69 | 50 | 38 | 29 | 23 | 18 | 15 | 12 | 10 | 8 | 7 | 6 | 5 | 4 |
| 2 Span | Positive Wind | 174 | 134 | 107 | 87 | 72 | 61 | 52 | 45 | 39 | 34 | 30 | 27 | 24 | 22 | 20 | 18 |
| | Negative Wind | 186 | 144 | 115 | 94 | 78 | 65 | 56 | 48 | 42 | 37 | 33 | 29 | 26 | 24 | 21 | 19 |
| | Live | 174 | 134 | 107 | 87 | 72 | 61 | 52 | 45 | 39 | 34 | 30 | 27 | 24 | 22 | 20 | 18 |
| | Deflection (L/180) | 476 | 319 | 224 | 163 | 122 | 94 | 74 | 59 | 48 | 39 | 33 | 28 | 23 | 20 | 17 | 15 |
| | Deflection (L/240) | 357 | 239 | 168 | 122 | 92 | 70 | 55 | 44 | 36 | 29 | 24 | 21 | 17 | 15 | 13 | 11 |
| 3 Span | Positive Wind | 213 | 165 | 132 | 108 | 90 | 76 | 65 | 56 | 49 | 43 | 38 | 34 | 30 | 27 | 25 | 23 |
| | Negative Wind | 227 | 177 | 142 | 116 | 96 | 81 | 69 | 60 | 52 | 46 | 41 | 36 | 33 | 29 | 27 | 24 |
| | Live | 213 | 165 | 132 | 108 | 90 | 76 | 65 | 56 | 49 | 43 | 38 | 34 | 30 | 27 | 25 | 23 |
| | Deflection (L/180) | 373 | 249 | 175 | 127 | 96 | 74 | 58 | 46 | 37 | 31 | 26 | 21 | 18 | 15 | 13 | 12 |
| | Deflection (L/240) | 279 | 187 | 131 | 95 | 72 | 55 | 43 | 34 | 28 | 23 | 19 | 16 | 13 | 11 | 10 | 9 |
| 4 Span | Positive Wind | 200 | 155 | 124 | 101 | 84 | 71 | 60 | 52 | 45 | 40 | 35 | 32 | 28 | 25 | 23 | 21 |
| | Negative Wind | 214 | 166 | 133 | 108 | 90 | 76 | 65 | 56 | 49 | 43 | 38 | 34 | 31 | 28 | 25 | 23 |
| | Live | 200 | 155 | 124 | 101 | 84 | 71 | 60 | 52 | 45 | 40 | 35 | 32 | 28 | 25 | 23 | 21 |
| | Deflection (L/180) | 396 | 265 | 186 | 135 | 102 | 78 | 61 | 49 | 40 | 33 | 27 | 23 | 19 | 16 | 14 | 12 |
| | Deflection (L/240) | 297 | 199 | 139 | 101 | 76 | 58 | 46 | 37 | 30 | 24 | 20 | 17 | 14 | 12 | 11 | 9 |

Notes:
1. Allowable uniform loads are based upon equal span lengths.
2. Positive Wind is wind pressure and is**NOT** increased by 33 1/3 %.
3. Negative Wind is wind suction or uplift and is**NOT** increased by 33 1/3%.
4. Live is the allowable live or snow load.
5. Deflection (L/180) is the allowable load that limits the panel's deflection to L/180 while under positive or live load.
6. Deflection (L/240) is the allowable load that limits the panel's deflection to L/240 while under positive or live load.
7. The weight of the panel has**NOT** been deducted from the allowable loads.
8. Positive Wind, Negative Wind, and Live Load values are limited to combined shear & bending using Eq. C3.3.1-1 of the AISI Specification.
9. Positive Wind and Live Load values are limited by web crippling using a bearing length of 2".
10. Web crippling values are determined using a ratio of the uniform loa**dactually**supported by the top flanges of the section.
11. Load Tables are limited to a maximum allowable load of 500 psf.

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# ICC-ES Evaluation Report

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**ESR-1976**

Reissued 07/2018

This report is subject to renewal 07/2020.

**DIVISION: 05 00 00—METALS**

**SECTION: 05 05 23—METAL FASTENINGS**

**REPORT HOLDER:**

## ITW BUILDEX

**EVALUATION SUBJECT:**

## ITW BUILDEX TEKS® SELF-DRILLING FASTENERS

ICC ES | ICC ES PMG | ICC ES LISTED

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# ICC-ES Evaluation Report

**ESR-1976**

*Reissued July 2018*

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**DIVISION: 05 00 00—METALS**
**Section: 05 05 23—Metal Fastenings**

**REPORT HOLDER:**

**ITW BUILDEX**

**EVALUATION SUBJECT:**

**ITW BUILDEX TEKS® SELF-DRILLING FASTENERS**

## 1.0 EVALUATION SCOPE

**Compliance with the following codes:**

- 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2015, 2012, 2009 *International Residential Code®* (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

**Property evaluated:**

Structural

## 2.0 USES

The ITW Buildex TEKS® Self-drilling Fasteners described in this report are used in engineered or code-prescribed connections of cold-formed steel framing and of sheet steel sheathing to cold-formed steel framing.

## 3.0 DESCRIPTION

### 3.1 General:

ITW Buildex TEKS® Self-drilling Fasteners are self-drilling tapping screws complying with the material, process, and performance requirements of ASTM C1513. The screws have either a hex washer head (HWH), an HWH with serrations, or a Phillips® (Type II) pan head. The screws are fully threaded, except where noted in Table 1, and the screws' threads comply with ASME B18.6.4, and the screws' drill points and flutes are proprietary and are designated as TEKS/1, TEKS/2, TEKS/3, TEKS/4, TEKS/4.5, and TEKS/5. The screws have nominal sizes of No.10 (0.190 inch), No.12 (0.216 inch), and $^1/_4$ inch (0.250 inch), and lengths from $^1/_2$ inch to 8 inches (12.70 mm to 203.20 mm). See Figures 1 through 3 for depictions of the screws. Table 1 provides screw descriptions (size, tpi, length), nominal diameters, head style, head diameters, point styles, drilling capacity ranges, length of load-bearing area and coatings.

### 3.2 Material:

ITW Buildex TEKS® Self-drilling Fasteners are case-hardened from carbon steel conforming to ASTM A510, Grades 1018 to 1022, and are heat-treated and case-hardened to give them a hard outer surface necessary to cut internal threads in the joint material. Screws are coated with corrosion preventive coating identified as Climaseal®, or are plated with electrodeposited zinc (E-Zinc) complying with the minimum corrosion resistance requirements of ASTM F1941.

### 3.3 Cold-formed Steel:

Cold-formed steel material must comply with one of the ASTM specifications listed in Section A2.1.1 of AISI S100-12 and have the minimum specified tensile strengths shown in the tables in this report.

## 4.0 DESIGN AND INSTALLATION

### 4.1 Design:

**4.1.1 General:** Screw thread length and point style must be selected on the basis of thickness of the fastened material and thickness of the supporting steel, respectively, based on the length of load-bearing area (see Figure 4) and drilling capacity given in Table 1.

When tested for corrosion resistance in accordance with ASTM B117, the screws meet the minimum requirement listed in ASTM F1941, as required by ASTM C1513, with no white corrosion after three hours and no red rust after 12 hours.

**4.1.2 Prescriptive Design:** ITW Buildex TEKS Self-drilling Fasteners described in Section 3.1 are recognized for use where ASTM C1513 screws of the same size and head style/dimension are prescribed in the IRC and in the AISI standards referenced in IBC Section 2210.

**4.1.3 Engineered Design:** ITW Buildex TEKS® Self-drilling Fasteners are recognized for use in engineered connections of cold-formed steel construction. Design of the connection must comply with Section E4 of AISI S100 (AISI-NAS for the 2006 IBC), using the nominal and allowable fastener tension and shear strength for the screws, shown in Table 5. Allowable connection strength for use in Allowable Strength Design (ASD) for pull-out, pullover, and shear (bearing) capacity for common sheet steel thicknesses are provided in Tables 2, 3, and 4, respectively, based upon calculations in accordance with AISI S100 (AISI-NAS for the 2006 IBC). Instructions on how to calculate connection design strengths for use in Load Resistance Factor Design (LRFD) are found in the footnotes of these tables. The connection strength values are applicable to connections where the connected steel elements are in direct contact with one another. For connections subject to tension, the least of the allowable pullout, pullover, and fastener tension strength found in Tables 2, 3 and 5, respectively, must be used for design.

For connections subject to shear, the lesser of the fastener shear strength and allowable shear (bearing) found in Tables 5 and 4, respectively, must be used for design. Design provisions for tapping screw connections subjected to combined shear and tension loading are outside the scope of this report.

For screws used in framing connections, in order for the screws to be considered fully effective, the minimum spacing between the fasteners and the minimum edge distance must be three times the nominal diameter of the screws, except when the edge is parallel to the direction of the applied force, the minimum edge distance must be 1.5 times the nominal screw diameter. When the spacing between screws is 2 times the fastener diameter, the connection shear strength values in Table 4 must be reduced by 20 percent (Refer to Section D1.5 of AISI S200).

For screws used in applications other than framing connections, the minimum spacing between the fasteners must be three times the nominal screw diameter and the minimum edge and end distance must be 1.5 times the nominal screw diameter. Additionally, under the 2009 and 2006 IBC, when the distance to the end of the connected part is parallel to the line of the applied force, the allowable connection shear strength determined in accordance with Section E4.3.2 of Appendix A of AISI S100-07 or AISI-NAS, as applicable, must be considered.

Connected members must be checked for rupture in accordance with Section E6 of AISI S100-12 for the 2015 IBC (Section E5 of AISI S100-07/S2-10 for the 2012 IBC; Section E5 of AISI S100-07 for the 2009 IBC).

**4.2 Installation:**

Installation of ITW Buildex TEKS® Self-drilling Fasteners must be in accordance with the manufacturer's published installation instructions and this report. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

The screws must be installed perpendicular to the work surface, using a screw driving tool. The installation speed for $^1/_4$-inch TEKS/3, $^1/_4$-inch TEKS/5, and #12 TEKS/5 screws should not exceed 1,800 rpm; the installation speed for all other screws should not exceed 2,500 rpm. The screw must penetrate through the supporting steel with a minimum of three threads protruding past the back side of the supporting steel.

## 5.0 CONDITIONS OF USE

The ITW Buildex TEKS® Self-drilling Fasteners described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

**5.1** Fasteners must be installed in accordance with the manufacturer's published installation instructions and this report. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.

**5.2** The utilization of the nominal strength values contained in this evaluation report, for the design of cold-formed steel diaphragms, is outside the scope of this report.

**5.3** The allowable load values (ASD) specified in Section 4.1 for screws or for screw connections are not permitted to be increased for short-duration loads, such as wind or earthquake loads.

**5.4** Drawings and calculations verifying compliance with this report and the applicable code must be submitted to the code official for approval. The drawings and calculations are to be prepared by a registered design professional when required by the statutes of the jurisdiction in which the project is to be constructed.

## 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Tapping Screw Fasteners (AC118), dated February 2016.

## 7.0 IDENTIFICATION

**7.1** ITW Buildex TEKS® Self-drilling Fastener heads are marked with "BX" as shown in Figures 1 through 3. Each box of fasteners has a label bearing the company name (ITW Buildex), fastener description (model, point type, diameter and length), lot number, and the evaluation report number (ESR-1976).

**7.2** The report holder's contact information is the following:

**ITW BUILDEX**
**700 HIGH GROVE BOULEVARD**
**GLENDALE HEIGHTS, ILLINOIS 60139**
**(800) 848-5611**
**www.itwbuildex.com**
**technical@itwccna.com**

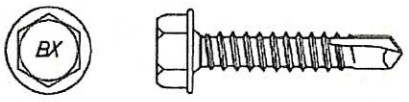


FIGURE 1—HEX WASHER HEAD (HWH)


FIGURE 2—HWH WITH SERRATIONS

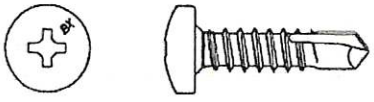


FIGURE 3—PHILLIPS PAN HEAD

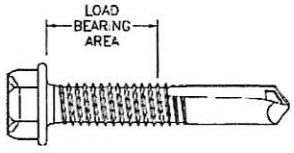


FIGURE 4—LENGTH OF LOAD-BEARING AREA

**TABLE 1—TESK® SELF-DRILLING TAPPING SCREWS[1]**

| DESCRIPTION (nom. size-tpi x length) | NOMINAL DIAMETER (inch) | HEAD STYLE | HEAD DIAMETER (inch) | DRILL POINT | DRILLING CAPACITY[3] (in.) | | LENGTH OF LOAD BEARING AREA[4] (inch) | COATING |
|---|---|---|---|---|---|---|---|---|
| | | | | | Min. | Max. | | |
| 10-16 x 3/4" | 0.190 | HWH | 0.400 | TEKS/1 | 0.018 | 0.095 | 0.220 | Climaseal |
| 12-14 x 3/4" | 0.216 | HWH | 0.415 | TEKS/1 | 0.018 | 0.095 | 0.205 | Climaseal |
| 1/4-14 x 7/8" | 0.250 | HWH | 0.415 | TEKS/1 | 0.018 | 0.095 | 0.380 | Climaseal |
| 10-16 x 1/2" | 0.190 | Pan | 0.365 | TEKS/3 | 0.036 | 0.175 | 0.150 | Climaseal |
| 10-16 x 5/8" | 0.190 | Pan | 0.365 | TEKS/3 | 0.036 | 0.175 | 0.200 | Climaseal |
| 10-16 x 3/4" | 0.190 | Pan | 0.365 | TEKS/3 | 0.036 | 0.175 | 0.325 | Climaseal |
| 10-16 x 1/2" | 0.190 | HWH | 0.400 | TEKS/3 | 0.036 | 0.175 | 0.150 | Climaseal |
| 10-16 x 5/8" | 0.190 | HWH | 0.400 | TEKS/3 | 0.036 | 0.175 | 0.200 | Climaseal |
| 10-16 x 3/4" | 0.190 | HWH | 0.400 | TEKS/3 | 0.036 | 0.175 | 0.325 | Climaseal |
| 10-16 x 1" | 0.190 | HWH | 0.400 | TEKS/3 | 0.036 | 0.175 | 0.575 | Climaseal |
| 10-16 x 1" | 0.190 | Pan | 0.365 | TEKS/3 | 0.036 | 0.175 | 0.575 | Climaseal |
| 10-16 x 1 1/4" | 0.190 | HWH | 0.400 | TEKS/3 | 0.036 | 0.175 | 0.825 | Climaseal |
| 10-16 x 1 1/2" | 0.190 | HWH | 0.400 | TEKS/3 | 0.036 | 0.175 | 1.075 | Climaseal |
| 10-16 x 3/4" | 0.190 | HWH[2] | 0.435 | TEKS/3 | 0.036 | 0.175 | 0.323 | E-Zinc |
| 12-14 x 3/4" | 0.216 | HWH | 0.415 | TEKS/3 | 0.036 | 0.210 | 0.270 | Climaseal |
| 12-14 x 1" | 0.216 | HWH | 0.415 | TEKS/3 | 0.036 | 0.210 | 0.520 | Climaseal |
| 12-14 x 1 1/4" | 0.216 | HWH | 0.415 | TEKS/2 | 0.036 | 0.210 | 0.550 | Climaseal |
| 12-14 x 1 1/2" | 0.216 | HWH | 0.415 | TEKS/2 | 0.036 | 0.210 | 0.800 | Climaseal |
| 12-14 x 2" | 0.216 | HWH | 0.415 | TEKS/3 | 0.036 | 0.210 | 1.450 | Climaseal |
| 12-14 x 2 1/2" | 0.216 | HWH | 0.415 | TEKS/3 | 0.036 | 0.210 | 1.950 | Climaseal |
| 12-14 x 3" | 0.216 | HWH | 0.415 | TEKS/3 | 0.036 | 0.210 | 2.450 | Climaseal |
| 12-14 x 4" | 0.216 | HWH | 0.415 | TEKS/3 | 0.036 | 0.210 | 3.450 | Climaseal |
| 1/4-14 x 3/4" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 0.210 | Climaseal |
| 1/4-14 x 1" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 0.400 | Climaseal |
| 1/4-14 x 1 1/4" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 0.650 | Climaseal |
| 1/4-14 x 1 1/2" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 0.900 | Climaseal |
| 1/4-14 x 2" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 1.400 | Climaseal |
| 1/4-14 x 2 1/2" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 1.900 | Climaseal |
| 1/4-14 x 3" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 2.400 | Climaseal |
| 1/4-14 x 4" | 0.250 | HWH | 0.500 | TEKS/3 | 0.036 | 0.210 | 3.400 | Climaseal |
| 1/4-14 x 3/4" | 0.250 | HWH[2] | 0.610 | TEKS/3 | 0.036 | 0.210 | 0.250 | Climaseal |
| 1/4-14 x 1" | 0.250 | HWH[2] | 0.610 | TEKS/3 | 0.036 | 0.210 | 0.500 | Climaseal |
| 12-24 x 7/8" | 0.216 | HWH | 0.415 | TEKS/4 | 0.125 | 0.250 | 0.325 | Climaseal |
| 12-24 x 1 1/4" | 0.216 | HWH | 0.415 | TEKS/4.5 | 0.125 | 0.375 | 0.575 | Climaseal |
| 12-24 x 1 1/4" | 0.216 | HWH | 0.415 | TEKS/5 | 0.125 | 0.500 | 0.375 | Climaseal |
| 12-24 x 1 1/2" | 0.216 | HWH | 0.415 | TEKS/5 | 0.125 | 0.500 | 0.625 | Climaseal |
| 12-24 x 2" | 0.216 | HWH | 0.415 | TEKS/5 | 0.125 | 0.500 | 1.125 | Climaseal |
| 1/4-28 x 3" | 0.250 | HWH | 0.415 | TEKS/5 | 0.125 | 0.500 | 2.150 | Climaseal |
| 1/4-28 x 4" | 0.250 | HWH | 0.415 | TEKS/5 | 0.125 | 0.500 | 3.150 | Climaseal |
| 1/4-28 x 5"[5] | 0.250 | HWH | 0.605 | TEKS/5 | 0.125 | 0.500 | 4.150 | Climaseal |
| 1/4-28 x 6"[5] | 0.250 | HWH | 0.605 | TEKS/5 | 0.125 | 0.500 | 5.150 | Climaseal |
| 1/4-28 x 8"[5] | 0.250 | HWH | 0.605 | TEKS/5 | 0.125 | 0.500 | 7.150 | Climaseal |

For SI: 1 inch = 25.4 mm.

[1] Screw dimensions comply with ASME B18.6.4 (nom. size = nominal screw size, tpi = threads per inch, length = inches).
[2] HWH with serrations.
[3] Drilling capacity refers to the minimum and maximum total allowable thicknesses of material the fastener is designed to drill through, including any space between the layers.
[4] Length of load-bearing area is the total screw length minus the length from the screw point to the third full thread. See Figure 4.
[5] Partially threaded.

TABLE 2—ALLOWABLE TENSILE PULL-OUT LOADS ($P_{NOT}/\Omega$), pounds-force[1, 2, 3, 4, 5]

| Steel $F_u$ = 45 ksi, Applied Factor of Safety, Ω=3.0 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Screw Designation | Nominal Diameter (in.) | Design Thickness of Member Not In Contact with the Screw Head (in) | | | | | | | | | | |
| | | 0.018 | 0.024 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 | 0.105 | 0.125 | 0.187 | 0.250 |
| 10-16 | 0.190 | 44 | 58 | 73 | 87 | 116 | 145 | 182 | 254 | 303 | [6] | [6] |
| 12-14, 12-24 | 0.216 | 50 | 66 | 83 | 99 | 132 | 165 | 207 | 289 | 344 | 515 | 689 |
| 1/4-14, 1/4-28 | 0.250 | 57 | 77 | 96 | 115 | 153 | 191 | 239 | 335 | 398 | 596 | 797 |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

[1]For tension connections, the least of the allowable pull-out, pullover, and fastener tension strength found in Tables 2, 3, and 5, respectively, must be used for design.
[2]ANSI/ASME standard screw diameters were used in the calculations and are listed in the tables.
[3]The allowable pull-out capacity for other member thickness can be determined by interpolating within the table.
[4]To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD Φ factor of 0.5.
[5]For $F_u$ = 58 ksi, multiply values by 1.29; for $F_u$ = 65 ksi, multiply values by 1.44.
[6]Outside drilling capacity limits.

TABLE 3—ALLOWABLE TENSILE PULLOVER LOADS ($P_{NOV}/\Omega$), pounds-force[1, 2, 3, 4, 5]

| Steel Fu = 45 ksi, Applied Factor of Safety, Ω=3.0 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Screw Designation | Nominal Diameter (in.) | Head or Integral Washer Diameter (in.) | Design Thickness of Member In Contact with the Screw Head (in) | | | | | | | | | | |
| | | | 0.018 | 0.024 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 | 0.105 | 0.125 | 0.187 | 0.250 |
| Hex Washer Head (HWH) | | | | | | | | | | | | | |
| 10-16 | 0.190 | 0.400 | 162 | 216 | 270 | 324 | 432 | 540 | 675 | 945 | 1125 | [6] | [6] |
| 12-14, 12-24 | 0.216 | 0.415 | 168 | 224 | 280 | 336 | 448 | 560 | 700 | 980 | 1167 | 1746 | 2334 |
| 1/4-14, 1/4-28 | 0.250 | 0.500 | 203 | 270 | 338 | 405 | 540 | 675 | 844 | 1181 | 1406 | 2104 | 2813 |
| HWH with Serrations | | | | | | | | | | | | | |
| 10-16 | 0.190 | 0.435 | 176 | 235 | 294 | 352 | 470 | 587 | 734 | 1028 | 1223 | [6] | [6] |
| 1/4-14 | 0.250 | 0.610 | 203 | 270 | 338 | 405 | 540 | 675 | 844 | 1181 | 1406 | 2104 | [6] |
| Phillips Pan Head | | | | | | | | | | | | | |
| 10-16 | 0.190 | 0.365 | 148 | 197 | 246 | 296 | 394 | 493 | 616 | 862 | 1027 | [6] | [6] |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

[1]For tension connections, the lower of the allowable pull-out, pullover, and fastener tension strength found in Tables 2, 3, and 5, respectively must be used for design.
[2]ANSI/ASME standard screw diameters were used in the calculations and are listed in the tables.
[3]The allowable pull-over capacity for other member thickness can be determined by interpolating within the table.
[4]To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD Φ factor of 0.5.
[5]For Fu = 58 ksi, multiply values by 1.29; for Fu = 65 ksi, multiply values by 1.44.
[6]Outside drilling capacity limits.

TABLE 4—ALLOWABLE SHEAR (BEARING) CAPACITY ($P_{ns}/\Omega$), pounds-force[1, 2, 3, 4, 5]

| Steel Fu = 45 ksi, Applied Factor of Safety, Ω=3.0 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Screw Designation | Nominal Diameter (in.) | Design Thickness of Member Not in Contact with the Screw Head (in) | Design Thickness of Member in Contact with the Screw Head (in) | | | | | | | | | |
| | | | 0.018 | 0.024 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 | 0.105 | 0.125 | 0.187 | 0.250 |
| 10-16 | 0.190 | 0.018 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | | |
| | | 0.024 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | | |
| | | 0.030 | 111 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | | |
| | | 0.036 | 120 | 152 | 185 | 188 | 188 | 188 | 188 | 188 | 188 | | |
| | | 0.048 | 139 | 168 | 199 | 228 | 289 | 289 | 289 | 289 | 289 | | |
| | | 0.060 | 139 | 185 | 213 | 239 | 327 | 404 | 404 | 404 | 404 | | |
| | | 0.075 | 139 | 185 | 231 | 251 | 337 | 427 | 564 | 564 | 564 | | |
| | | 0.105 | 139 | 185 | 231 | 277 | 356 | 436 | 570 | 808 | 808 | | |
| | | 0.125 | 139 | 185 | 231 | 277 | 369 | 442 | 571 | 808 | 962 | | |
| 12-14 12-24 | 0.216 | 0.018 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| | | 0.024 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 |
| | | 0.030 | 125 | 152 | 152 | 152 | 152 | 152 | 152 | 152 | 152 | 152 | 152 |
| | | 0.036 | 136 | 170 | 205 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| | | 0.048 | 157 | 190 | 223 | 253 | 308 | 308 | 308 | 308 | 308 | 308 | 308 |
| | | 0.060 | 157 | 210 | 240 | 266 | 362 | 430 | 430 | 430 | 430 | 430 | 430 |
| | | 0.075 | 157 | 210 | 262 | 282 | 375 | 468 | 601 | 601 | 601 | 601 | 601 |
| | | 0.105 | 157 | 210 | 262 | 315 | 402 | 483 | 624 | 919 | 919 | 919 | 919 |
| | | 0.125 | 157 | 210 | 262 | 315 | 420 | 494 | 629 | 919 | 1094 | 1094 | 1094 |
| | | 0.187 | 157 | 210 | 262 | 315 | 420 | 525 | 642 | 919 | 1094 | 1636 | 1636 |
| | | 0.250 | 157 | 210 | 262 | 315 | 420 | 525 | 656 | 919 | 1094 | 1636 | 2187 |
| 1/4-14 1/4-28[6] | 0.250 | 0.018 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| | | 0.024 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| | | 0.030 | 142 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 |
| | | 0.036 | 156 | 193 | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 |
| | | 0.048 | 182 | 218 | 253 | 283 | 331 | 331 | 331 | 331 | 331 | 331 | 331 |
| | | 0.060 | 182 | 243 | 276 | 300 | 406 | 463 | 463 | 463 | 463 | 463 | 463 |
| | | 0.075 | 182 | 243 | 304 | 322 | 424 | 521 | 647 | 647 | 647 | 647 | 647 |
| | | 0.105 | 182 | 243 | 304 | 365 | 461 | 544 | 694 | 1063 | 1063 | 1063 | 1063 |
| | | 0.125 | 182 | 243 | 304 | 365 | 486 | 560 | 703 | 1063 | 1266 | 1266 | 1266 |
| | | 0.187 | 182 | 243 | 304 | 365 | 486 | 608 | 731 | 1063 | 1266 | 1893 | 1893 |
| | | 0.250 | 182 | 243 | 304 | 365 | 486 | 608 | 759 | 1063 | 1266 | 1893 | 2531 |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

[1]The lower of the allowable shear (bearing) and the allowable fastener shear strength found in Tables 4 and 5, respectively, must be used for design.
[2]ANSI/ASME standard screw diameters were used in the calculations and are listed in the tables.
[3]The allowable bearing capacity for other member thickness can be determined by interpolating within the table.
[4]To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD Φ factor of 0.5.
[5]For $F_u$ = 58 ksi, multiply values by 1.29; for $F_u$ = 65 ksi, multiply values by 1.44.
[6]Shear values do not apply to 5, 6 and 8-inch-long 1/4-28 screws, due to the fact that they are not fully threaded.

TABLE 5—FASTENER STRENGTH OF SCREWS[1, 2, 3, 4, 5]

| SCREW DESIGNATION | DIAMETER (in.) | ALLOWABLE FASTENER STRENGTH | | NOMINAL FASTENER STRENGTH | |
|---|---|---|---|---|---|
| | | Tensile, $P_{ts}/\Omega$ (lb) | Shear, $P_{ss}/\Omega$ (lb) | Tensile, $P_{ts}$ (lb) | Shear, $P_{ss}$ (lb) |
| 10-16 | 0.190 | 885 | 573 | 2654 | 1718 |
| 12-14 | 0.216 | 1184 | 724 | 3551 | 2171 |
| 12-24 | 0.216 | 1583 | 885 | 4750 | 2654 |
| 1/4-14 | 0.250 | 1605 | 990 | 4816 | 2970 |
| 1/4-28 | 0.250 | 1922 | 1308 | 5767 | 3925 |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

[1]For tension connections, the least of the allowable pull-out, pullover, and fastener tension strength found in Tables 2, 3, and 5, respectively, must be used for design.
[2]For shear connection, the lower of the allowable shear (bearing) and the allowable fastener shear strength found in Table 4 and 5, respectively, must be used for design.
[3]See Section 4.1 for fastener spacing and end distance requirements.
[4]Nominal strengths are based on laboratory tests;
[5]To calculate LRFD values, multiply nominal strength values by the LRFD Φ factor of 0.5.

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## BUILDING CODE:

2018 EDITION OF THE INTERNATIONAL BUILDING CODE

## LOADS:

**ROOFS:**
ROOF LIVE LOAD = 20 PSF (REDUCIBLE).
ROOF DEAD LOAD = 2 PSF.
**LATERAL:**
3 SECOND WIND GUST = 115 MPH, EXPOSURE C.
SOIL SITE CLASS D.
SHORT PERIOD SPECTRAL ACCELERATION Ss = 0.235.
ONE SECOND SPECTRAL ACCELERATION S1 = 0.066.

## FOUNDATIONS:

SPREAD FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL 1'-6" MINIMUM BELOW ADJACENT IS DEFINED AS TOP OF SLAB FOR INTERIOR FOOTINGS AND LOWEST ADJACENT GRADE WITHIN 5 FEET FOR PERIMETER FOOTINGS. DESIGN SOIL BEARING VALUE = 1000 PSF. SPECIAL INSPECTION OF THE SOIL IS REQUIRED. ALLOWABLE LATERAL BEARING PRESSURE IS 100PSF. LATERAL SLIDING COFFICIENET OF FRICTION IS 0.25. ASSUMED CLASS OF MATERIAL IS 4 PER TABLE 1806.2. SOIL CLASS TYPE 4 IS ASSUMED.

CAISSON CONCRETE SHALL BE PLACED ON CLEAN, INSPECTED SOIL BEARING A MINIMUM OF 3'-0" INTO BEARING STRATA. DESIGN SOIL BEARING VALUE = 1000 PSF.

## CONCRETE:

MINIMUM 28 DAY STRENGTH 3,000 PSI EXCEPT AS FOLLOWS:

FOUNDATIONS (DESIGN BASED ON 2,500 PSI)---------- 2,500 PSI

**GENERAL:**

ALL CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ACI. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED UNLESS NOTED OTHERWISE. FOR CONCRETE WITHOUT PLASTICIZER, MAXIMUM SLUMP 4 1/2" AT POINT OF PLACEMENT U.N.O. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON THE ENGINEER'S APPROVAL.

UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE EMBEDMENT OF CONDUITS, PIPES, SLEEVES, ETC. OF ANY MATERIAL SHALL NOT BE PERMITTED WITHIN ANY CONCRETE STRUCTURAL ELEMENT (IE: COLUMNS, BEAMS, ELEVATED SLABS, ETC.) OR STRUCTURAL CONCRETE TOPPINGS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.

## REINFORCING:

ALL REINFORCING PER CRSI SPECIFICATIONS AND HANDBOOK. ASTM A615 (Fy = 60 KSI / GRADE 60) DEFORMED BARS FOR ALL BARS #5 AND LARGER. ASTM A615 (Fy = 40 KSI / GRADE 40) DEFORMED BARS FOR ALL BARS #4 AND SMALLER. WHERE SHOWN ON DRAWINGS ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. WELDED WIRE FABRIC PER ASTM A185, WIRE PER ASTM A82. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGES AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---------- 3"
EXPOSED TO EARTH OR WEATHER
#6 OR LARGER ---------- 2"
#5 AND SMALLER ---------- 1 1/2"
ALL OTHER PER LATEST EDITION OF ACI 318

ALL REINFORCING SHALL BE CHAIRED TO ENSURE PROPER CLEARANCES. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE/CORROSION BY USE OF A PLASTIC OR CONCRETE CHAIR. DUCT-TAPE COVERED REINFORCING IS NOT AN ACCEPTABLE CHAIR.

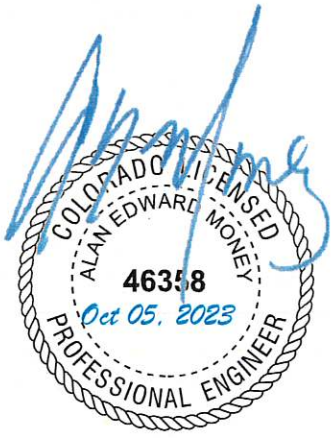
ALL DIMENSIONS REFERENCED IN DRAWINGS AS "CLEAR" SHALL BE FROM THE FACE OF STRUCTURE TO EDGE OF REINFORCING, AND SHALL NOT BE LESS THAN STATED, NOR GREATER THAN "CLEAR" DIMENSION PLUS 3/8". ALL OTHERS SHALL BE PLUS OR MINUS 1/4" TYPICAL UNLESS NOTED OTHERWISE.

FIELD BENDING OR STRAIGHTENING OF DEFORMED BARS SHALL BE LIMITED TO #5 BARS AND SMALLER AND SHALL BE FIELD BENT OR STRAIGHTENED ONLY ONCE. ANY BEND SHALL BE LIMITED TO 90 DEGREES. IF FIELD BENDING OR STRAIGHTENING OF #6 BARS OR LARGER IS REQUIRED, OR IF A SECOND BEND IS REQUIRED FOR #5 BARS AND SMALLER, HEAT SHALL BE APPLIED FOR BENDING OR STRAIGHTENING. THE CONTRACTOR SHALL SUBMIT PROCEDURE FOR APPLYING HEAT TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BENDING OR STRAIGHTENING BARS.

**LAP SPLICES IN CONCRETE:**

ALL SPLICE LOCATIONS SUBJECT TO APPROVAL BY THE ENGINEER. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. DOWEL VERTICAL REINFORCING TO FOUNDATION WITH STANDARD 90-DEGREE HOOKS UNLESS NOTED OTHERWISE. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE. ONLY WHEN SPECIFICALLY NOTED ON DRAWINGS MAY CONCRETE COLUMN DOWEL EMBEDMENT BE A STANDARD COMPRESSION DOWEL WITH EMBEDMENT LENGTH ACCORDING TO THE LATEST EDITION OF THE ACI 318.

LAP SPLICES, UNLESS NOTED OTHERWISE, SHALL BE CLASS "B" TENSION LAP SPLICES PER THE LATEST EDITION OF ACI 318. STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH. ONLY WHEN SPECIFICALLY NOTED ON DRAWINGS MAY LAP SPLICES IN CONCRETE COLUMNS BE STANDARD COMPRESSION LAP SPLICES.

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## STRUCTURAL STEEL:

ALL CONSTRUCTION PER LATEST AISC HANDBOOK. ALL TUBE STEEL SHALL BE ASTM A500 (Fy = 46 KSI). ALL PIPE STEEL SHALL BE ASTM A501 (Fy = 36 KSI) ALL MISCELLANEOUS STEEL UNLESS NOTED OTHERWISE SHALL BE ASTM A36 (Fy = 36 KSI).

ALL STRUCTURAL ROLLED STEEL MEMBERS WITH Fy GREATER THAN 36 KSI ARE TO BE IDENTIFIED WITH AN ASTM SPECIFICATION MARK OR TAG PER IBC SEC. 2203.1. UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE ASTM A307.

**HIGH STRENGTH BOLTS:**

ALL HIGH STRENGTH BOLTS SHALL BE ASTM A325N AND SHALL BE INSTALLED AS BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE. INSTALL WASHERS AND TIGHTEN "SNUG TIGHT" PER AISC SPECIFICATIONS. NO DIRECT TENSION INDICATOR TIGHTENING DEVICES OR ALTERNATE DESIGN FASTENERS ARE PERMITTED WITH "SNUG TIGHT" APPLICATIONS WITHOUT PRIOR APPROVAL OF THE ENGINEER. FOR ADDITIONAL INFORMATION, SEE ABOVE.

**WELDING:**

UNLESS NOTED OTHERWISE, ALL WELDS PER LATEST EDITION OF THE AWS STANDARDS. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE. FOR GRADE 60 REINFORCING BARS, USE E90 SERIES. THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS, THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT THEIR DISCRETION. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW.

## STEEL DECKING:

**STANDARD GENERAL:**

ALL STEEL DECK SHALL BE MANUFACTURED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF SDI AND UES #ER-0550 OR APPROVED EQUIVALENT. STEEL DECK SHALL BEAR ON SUPPORTS A MINIMUM OF 2 INCHES. ENDS OF SHEETS MUST BE LAPPED A MINIMUM OF 2 INCHES OVER SUPPORTS.

WELDERS EXPERIENCED IN LIGHT GAGE STEEL DECK WORK SHALL PERFORM ALL WELDING. DECK WELDING MAY BE ACHIEVED WITH E60 SERIES NON-LOW HYDROGEN RODS OR E70 SERIES LOW HYDROGEN RODS.

SCREWS WHERE INDICATED SHALL BE #12-24 TRAXX PER ICC-ES ESR-2409 OR APPROVED EQUIVALENT.

**CANOPY ROOF DECK:**

DECK SHALL BE 1.5" DEEP, 36" WIDE, 24 GAUGE GALVANIZED STEEL, WITH MINIMUM YIELD STRESS OF 38 KSI, WITH MINIMUM S = 0.246 IN3 AND I = .207 IN4 PER FOOT OF WIDTH. DECK SHALL BE ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AS 2 SPAN MINIMUM AND SHALL BE ATTACHED FOR A MINIMUM DIAPHRAGM SHEAR CAPACITY OF 836 PLF USING THE FOLLOWING MINIMUM ATTACHMENTS:

SCREW DECK TO SUPPORTING MEMBERS WITH 7 - SCREWS WITH NEOPRENE WASHERS PER SHEET AT ENDS, END LAPS AND AT INTERMEDIATE SUPPORTS, AND AT 12" O.C. AT PERIMETER BEAMS AND OPENING EDGES RUNNING PARALLEL TO THE DECK. SIDE SEAM ATTACHMENT SHALL BE SCREWS WITH NEOPRENE WASHERS SPACED AT 24" O.C.

## GENERAL NOTES:

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. EXCEPT WHERE NOTED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF A REGISTERED ENGINEER RECOGNIZED BY THE BUILDING CODE JURISDICTION OF THIS PROJECT.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL ITEMS WITH THE APPROPRIATE TRADE DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS BUT APPLY UNLESS NOTED OTHERWISE.

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE. IF AN OPTION IS CHOSEN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES, APPROVALS AND THE COORDINATION OF THE WORK WITH ALL RELATED TRADES AND SUPPLIERS.

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**SPECIAL INSPECTION - STRUCTURAL ONLY:** A SPECIAL INSPECTION IS TO BE PROVIDED FOR THE ITEMS LISTED BELOW IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE BUILDING JURISDICTION. "SPECIAL STRUCTURAL INSPECTION" SHALL NOT RELIEVE THE OWNER OR THEIR AGENT FROM REQUESTING THE BUILDING JURISDICTION INSPECTIONS REQUIRED BY. SECTION 1704 OF THE INTERNATIONAL BUILDING CODE. SPECIAL INSPECTION IS REQUIRED PER CHAPTER 17 FOR THE FOLLOWING:

STEEL CONSTRUCTION

1. THE PERIODIC INSPECTION OF MATERIAL VERIFICATION FOR HIGH-STRENGTH BOLTS, NUTS AND WASHERS REGARDING IDENTIFICATION MARKINGS TO CONFORM TO ASTM AND MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.
2. INSPECTION OF HIGH STRENGTH BOLTING:

A. PERIODIC INSPECTIONS FOR BEARING-TYPE CONNECTIONS
B. PERIODIC AND CONTINUOUS INSPECTIONS FOR SLIP-CRITICAL CONNECTIONS.

3. INSPECTION OF WELDING:

A. STRUCTURAL STEEL:

1) CONTINUOUS INSPECTION OF COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.
2) CONTINUOUS INSPECTION OF MUNTIPASS FILLET WELDS.
3) CONTINUOUS INSPECTION OF SINGLE-PASS FILLET WELDS > 5/16".
4) PERIODIC INSPECTION OF SINGLE-PASS FILLET WELDS < 5/16".
5) PERIODIC INSPECTION OF FLOOR AND DECK WELDS.

B. REINFORCING STEEL:

1) PERIODIC INSPECTION OF VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706.
2) CONTINUOUS INSPECTION OF REINFORCING STEEL-RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS AND SHEAR REINFORCEMENT.
3) CONTINUOUS INSPECTION OF SHEAR REINFORCING
4) PERIODIC INSPECTION OF OTHER REINFORCING STEEL

4. PERIODIC INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS.
5. ON-DESTRUCTIVE TESTING OF ALL COMPLETE PENETRATION WELDS BY AN AWS CERTIFIED INDEPENDENT TESTING LABORATORY AT THE CONTRACTORS' EXPENSE.

A. VERIFICATION OF VALID WELDER'S CERTIFICATES TO MEET AWS.
B. ALL STRUCTURAL STEEL FABRICATORS SHALL EMPLOY AN AWS CERTIFIED INDEPENDENT TESTING LAB TO PROVIDE SHOP WELD INSPECTIONS PER CODE. INSPECTION REPORTS SHALL BE SUBMITTED TO ENGINEER OF RECORD PRIOR TO STEEL INSTALLATION. EXCEPTION: NO SHOP INSPECTION IS REQUIRED IF THE FABRICATOR IS ON THE CITY'S APPROVED STEEL FABRICATOR LIST.

CONCRETE CONSTRUCTION:

1. CONTINUOUS INSPECTION OF BOLTS TO BE INSTALLED IN THE CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWED LOADS HAVE BEEN INCREASED.
2. PERIODIC INSPECTION OF VERIFYING USE OF REQUIRED DESIGN MIX.
3. CONTINUOUS INSPECTION AT TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS.
4. CONTINUOUS INSPECTION OF CONCRETE AND SHORTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.

INSPECTION IS NOT REQUIRED FOR FOOTING SUPPORTING WALLS OF LIGHT FRAME CONSTRUCTION OR FOR UNREINFORCED SLABS ON GRADE.

EXPANSION, EPOXY, AND ADHESIVE ANCHORS: DURING THE PLACEMENT OF ALL ANCHORS SHOWN ON STRUCTURAL DRAWINGS. ADDITIONAL INSPECTIONS REQUIRED FOR REPAIR DETAILS SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

1. INSPECTION OF HOLE DIAMETER AND DEPTH.
2. INSPECTION OF HOLE CLEANING WITH WIRE BRUSH AND COMPRESSED AIR.
3. INSPECTION OF ANCHOR INSTALLATION USING SPECIFIED PRODUCT AND MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.

FOUNDATION SOIL INSPECTION PRIOR TO PLACEMENT OF CONCRETE IS REQUIRED.

**DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:**

1. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.
2. THE SPECIAL INSPECTOR IS NOT AUTHORIZED TO APPROVE DEVIATIONS FROM DESIGN DRAWINGS OR SPECIFICATIONS, AND ALL DEVIATIONS MUST BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO PROCEEDING WITH THE WORK. ALL REQUESTS FOR DEVIATIONS SHALL BE INITIATED BY THE CONTRACTOR VIA WRITTEN REQUEST FOR INFORMATION (RFI).
3. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE ENGINEER OR ARCHITECT OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE DESIGN AUTHORITY AND THE BUILDING OFFICIAL.
4. THE CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR WITH ACCESS TO ALL ITEMS REQUIRING SPECIAL INSPECTION. ACCESS SHALL BE PROVIDED BY IN-PLACE LADDERS, SCAFFOLDS, LIFTS AND/OR OTHER EQUIPMENT OPERATED BY THE CONTRACTOR'S PERSONNEL AS REQUIRED FOR SAFE OBSERVATION. THE INSPECTOR IS NOT RESPONSIBLE OR AUTHORIZED TO OPERATE THE CONTRACTOR'S EQUIPMENT.
5. UPON COMPLETION OF THE ASSIGNED WORK THE ENGINEER OR ARCHITECT SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO THE BEST OF THEIR KNOWLEDGE THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

FOR ADDITIONAL INFORMATION ON SPECIAL STRUCTURAL INSPECTIONS, CONTACT ENGINEER PRIOR TO THE START OF CONSTRUCTION.

SPECIAL INSPECTOR, CONTRACTOR, AND THE BUILDING OFFICIAL. THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFYING ANY REPORTED DEFICIENCIES WHICH, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.

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# MATERIAL LIST

| BEAM/COLUMN | SIZE | BOLT DIA. | GRADE: | END PLATE |
|---|---|---|---|---|
| COLUMN | 7"X7"X.188 HSS | PER DETAIL | | ½" |
| MAIN BEAM | 8"X6"X.188 HSS | ⅝" | A307 | ⅜" |
| PERIMETER BEAM | 6"X4"X.120 HSS | ⅝" | A325 | ⅜" |
| MID BEAM | 4"X3"X.120 HSS | (3) #14 HEX TEK SCREWS | | NA |
| EXTENSION BEAM | 6"X4"X.120 HSS | NA | NA | NA |
| COMPRESSION RING | PER DETAIL | | | |

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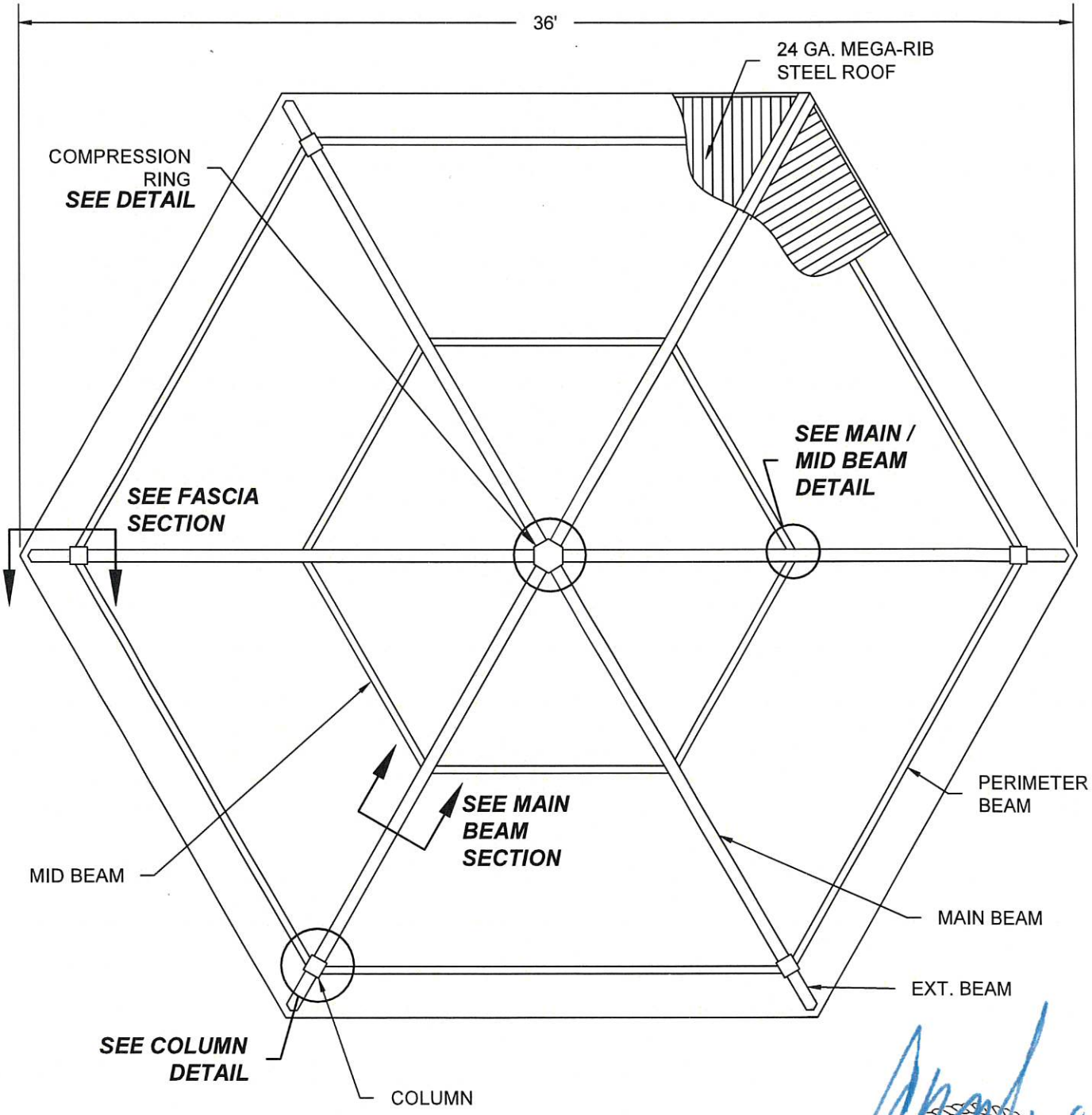
NOTE: STRUCTURE(S) SHALL NOT BE MODIFIED OR ALTERED WITHOUT PRIOR WRITTEN PERMISSION FROM CLASSIC RECREATION SYSTEMS, INC. STRUCTURAL CALCULATIONS FOR THIS STRUCTURE DO NOT ALLOW FOR ANY ADDITIONAL LATERAL LOADS FOR ADDED WALLS OR STRUCTURES CONNECTED TO THIS UNIT.




# PLAN VIEW 36' CHARLESTON MODEL

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Detail Sheet 5 of 14

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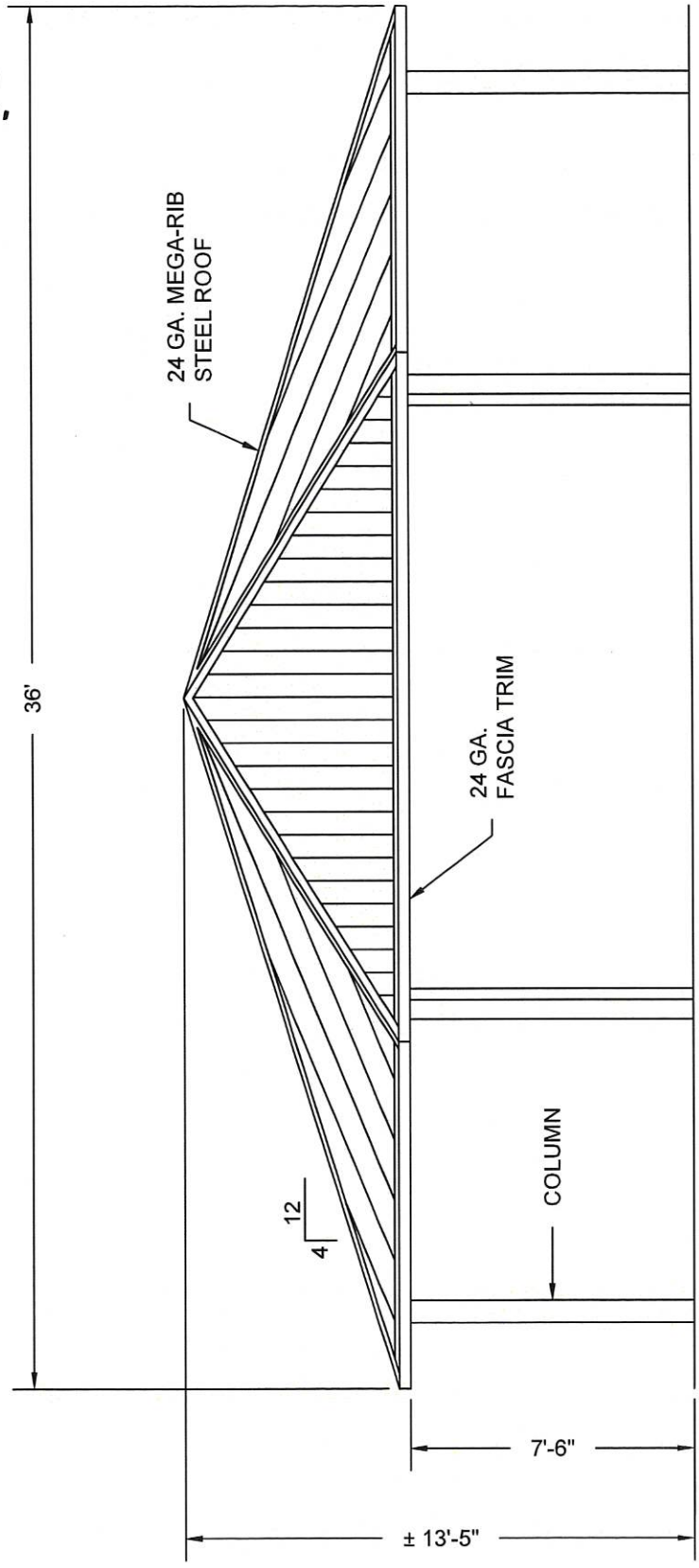


# ELEVATION 36' CHARLESTON MODEL
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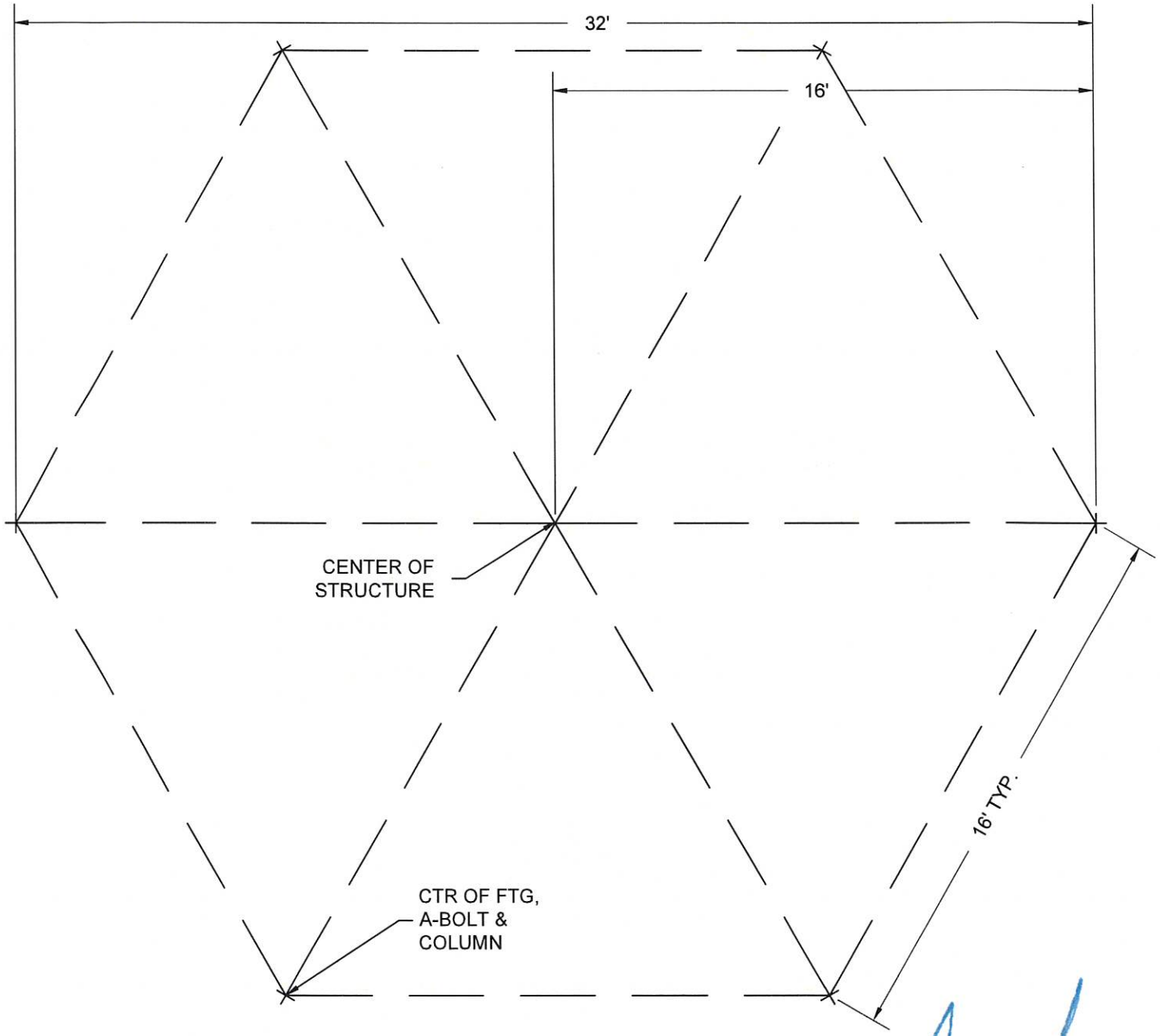


# LAYOUT PLAN 36' CHARLESTON MODEL

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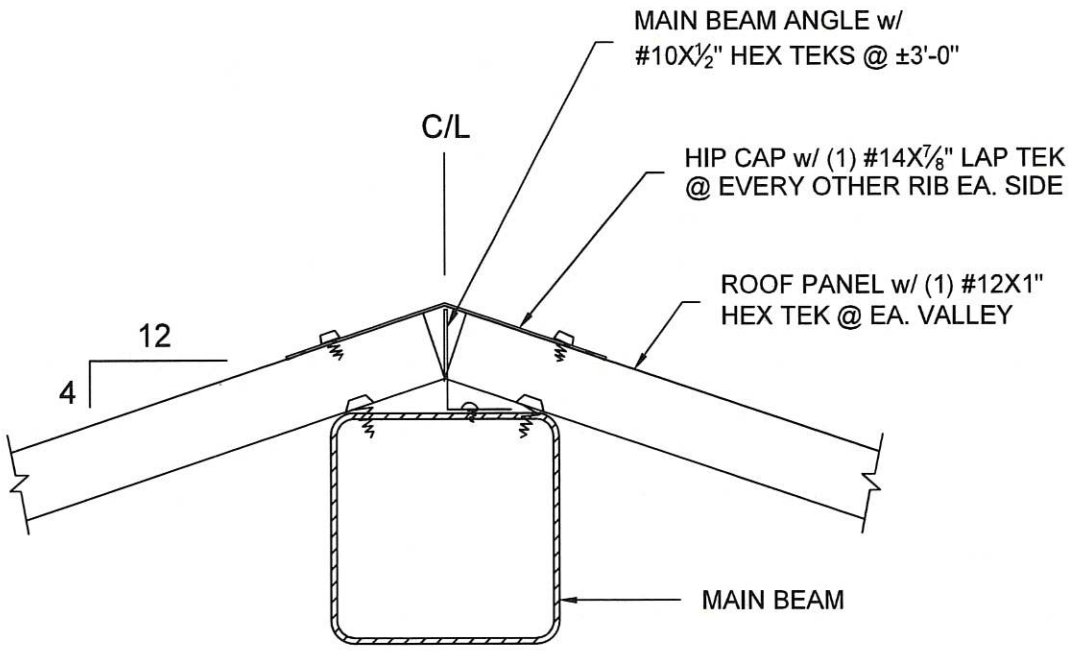


# MAIN BEAM SECTION
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| | |
|---|---|
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| | Detail Sheet 8 of 14 |

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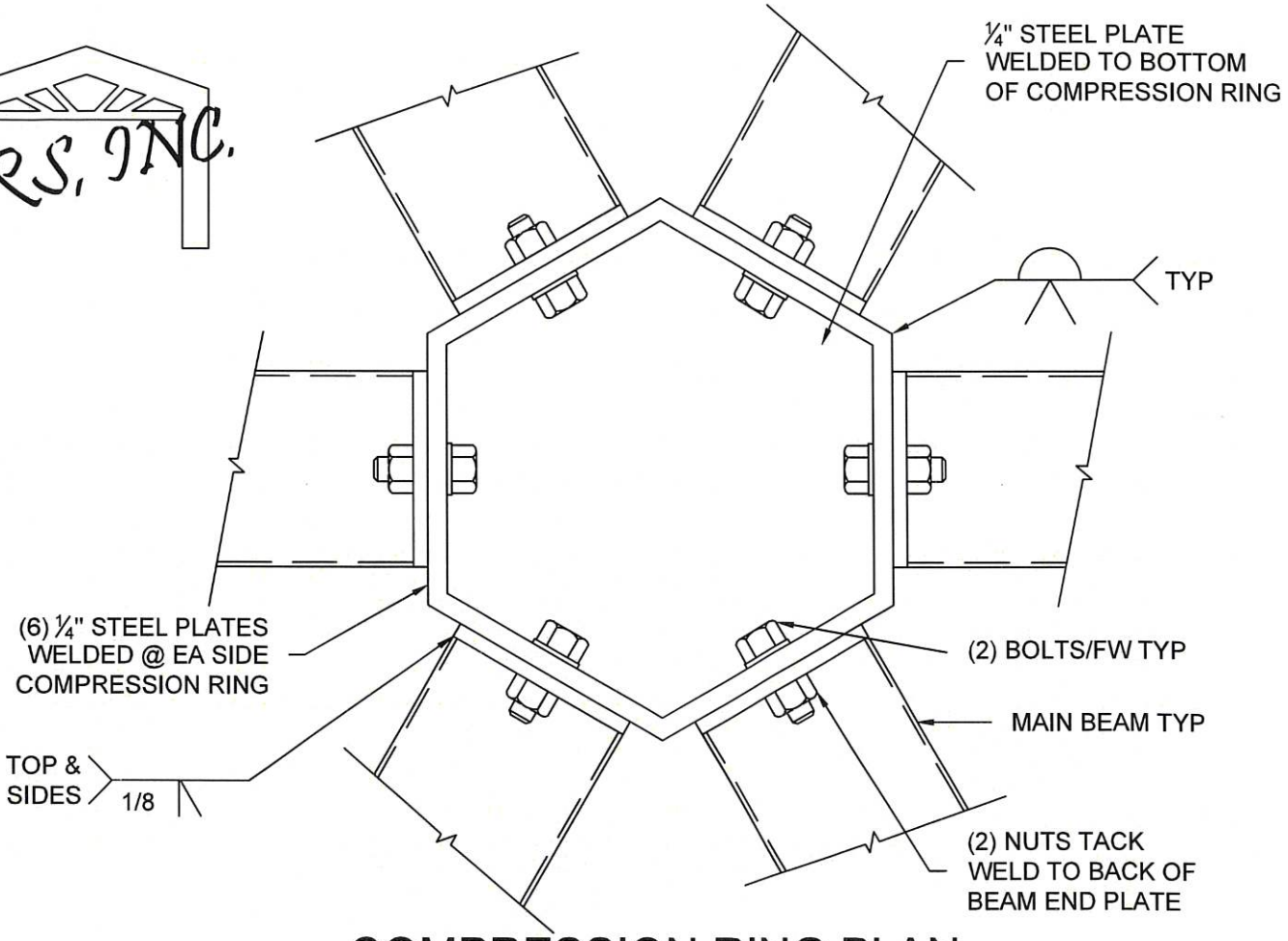


## COMPRESSION RING PLAN

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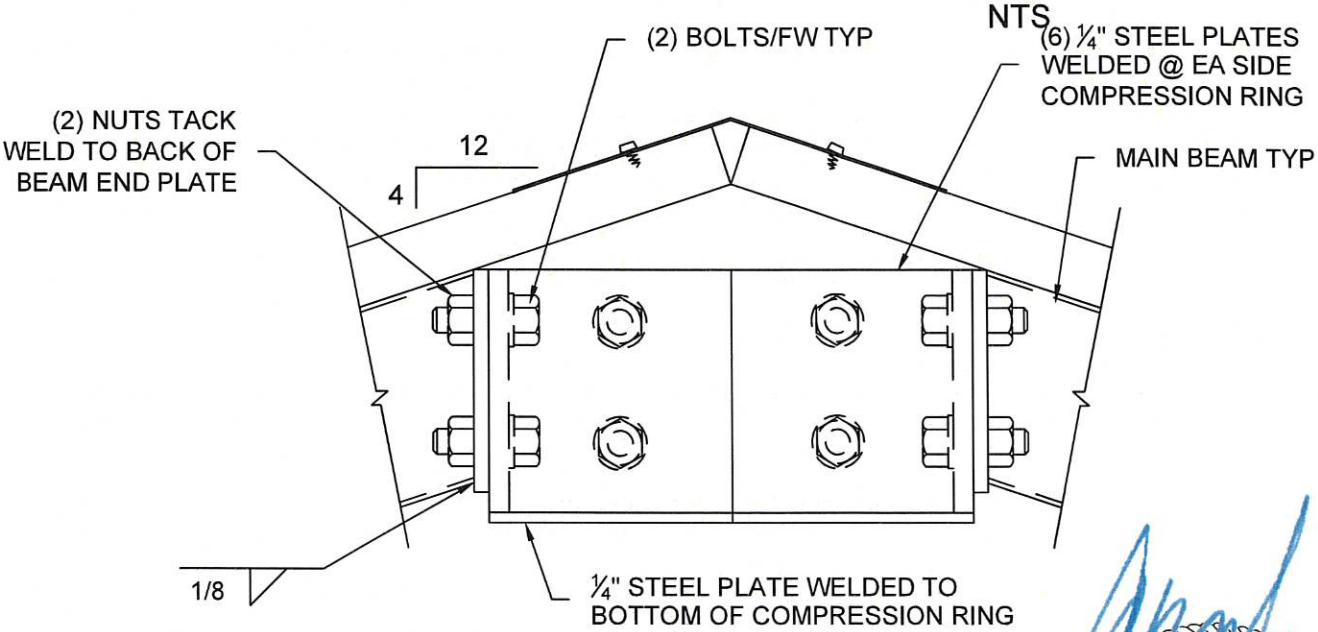


## COMPRESSION RING SECTION

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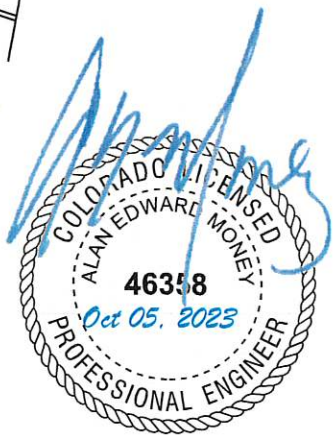


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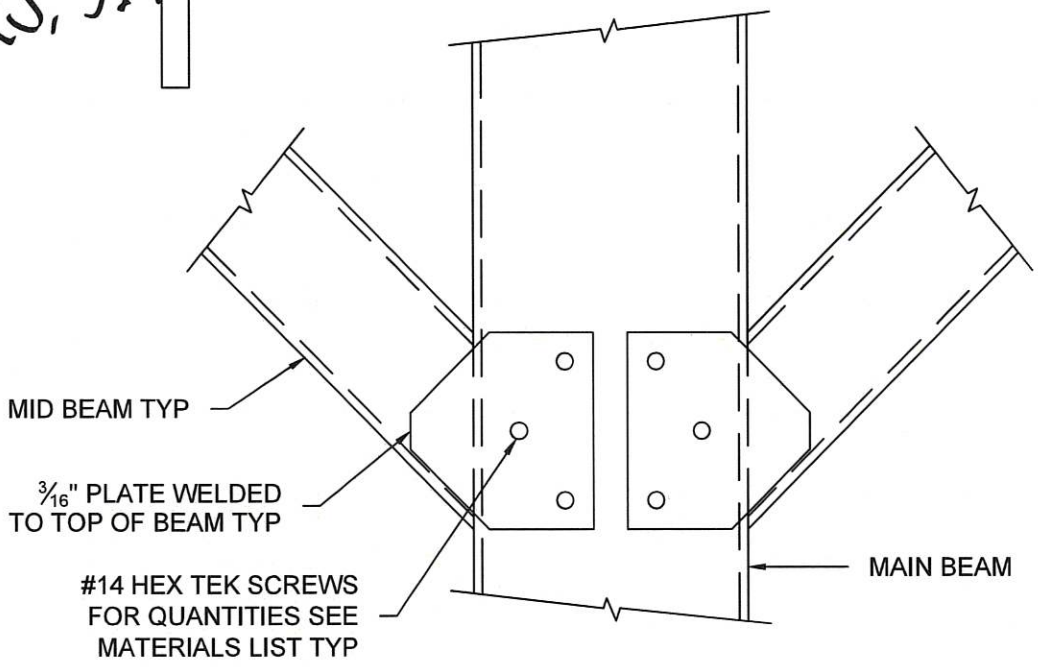
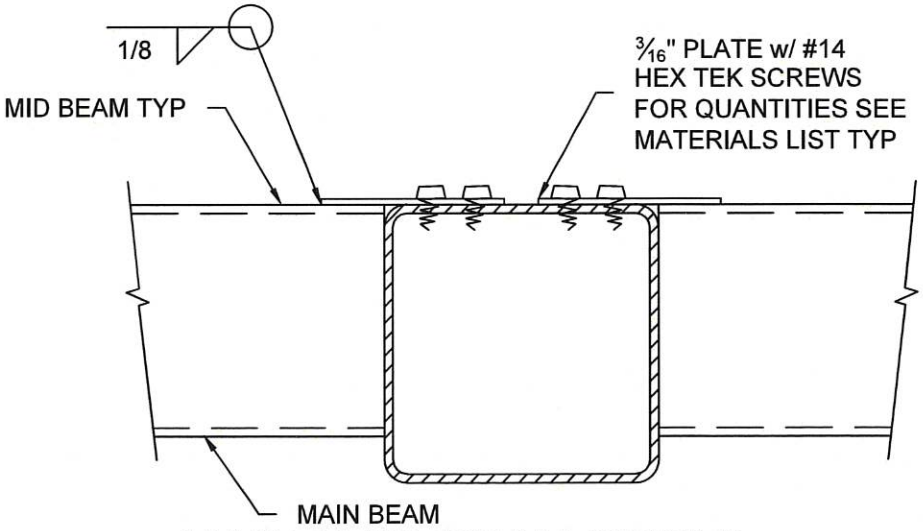



## MAIN / MID BEAM PLAN
NTS




## MAIN / MID BEAM DETAIL
NTS

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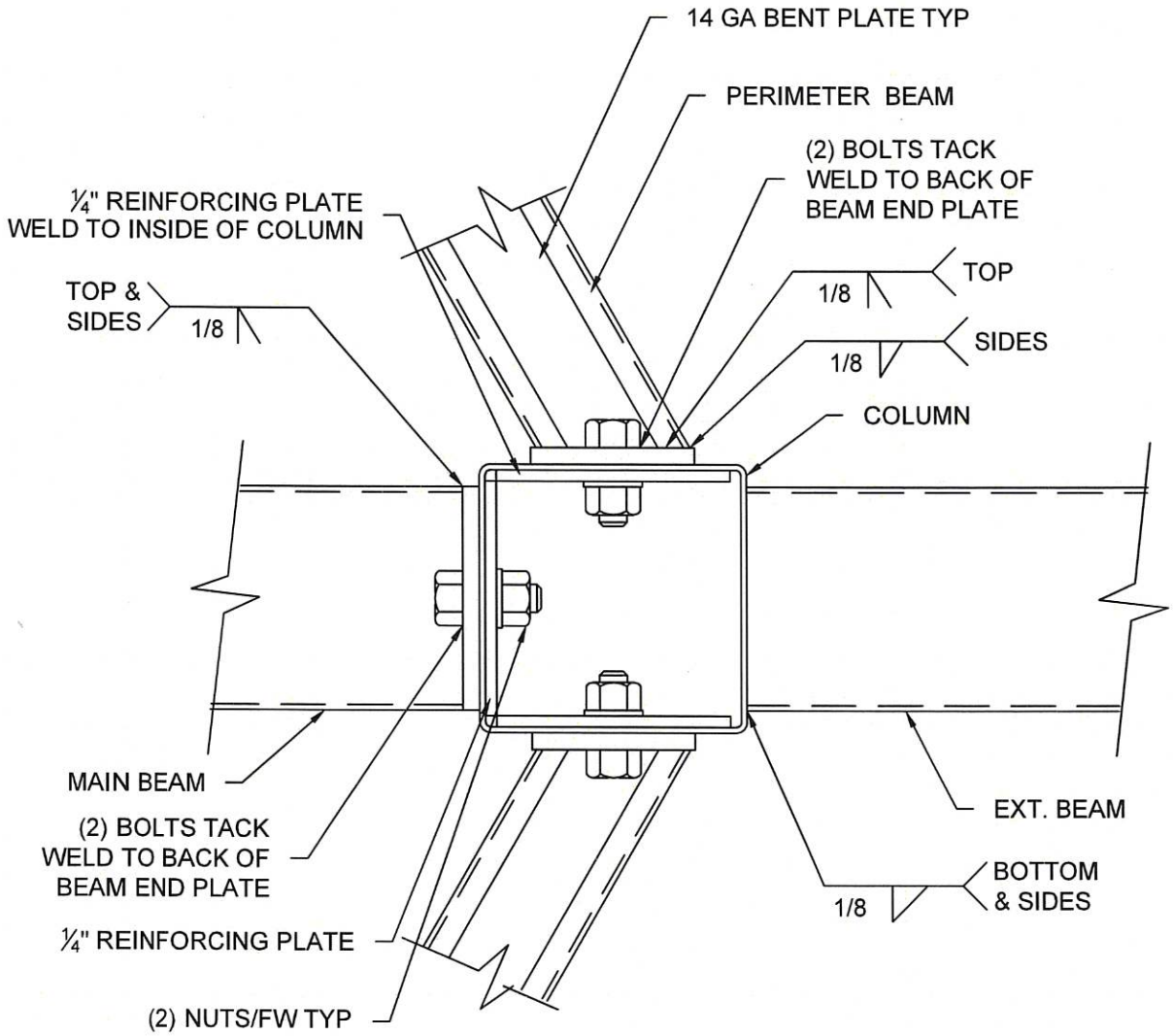
|---|---|
| MAROLT, REED PARK<br>250 S. ELM STREET<br>FRUITA, CO 81521 | #23160 |
| | Detail Sheet 10of 14 |

CRS, INC.




# PLAN VIEW / COLUMN CONNECTION DETAIL

NTS

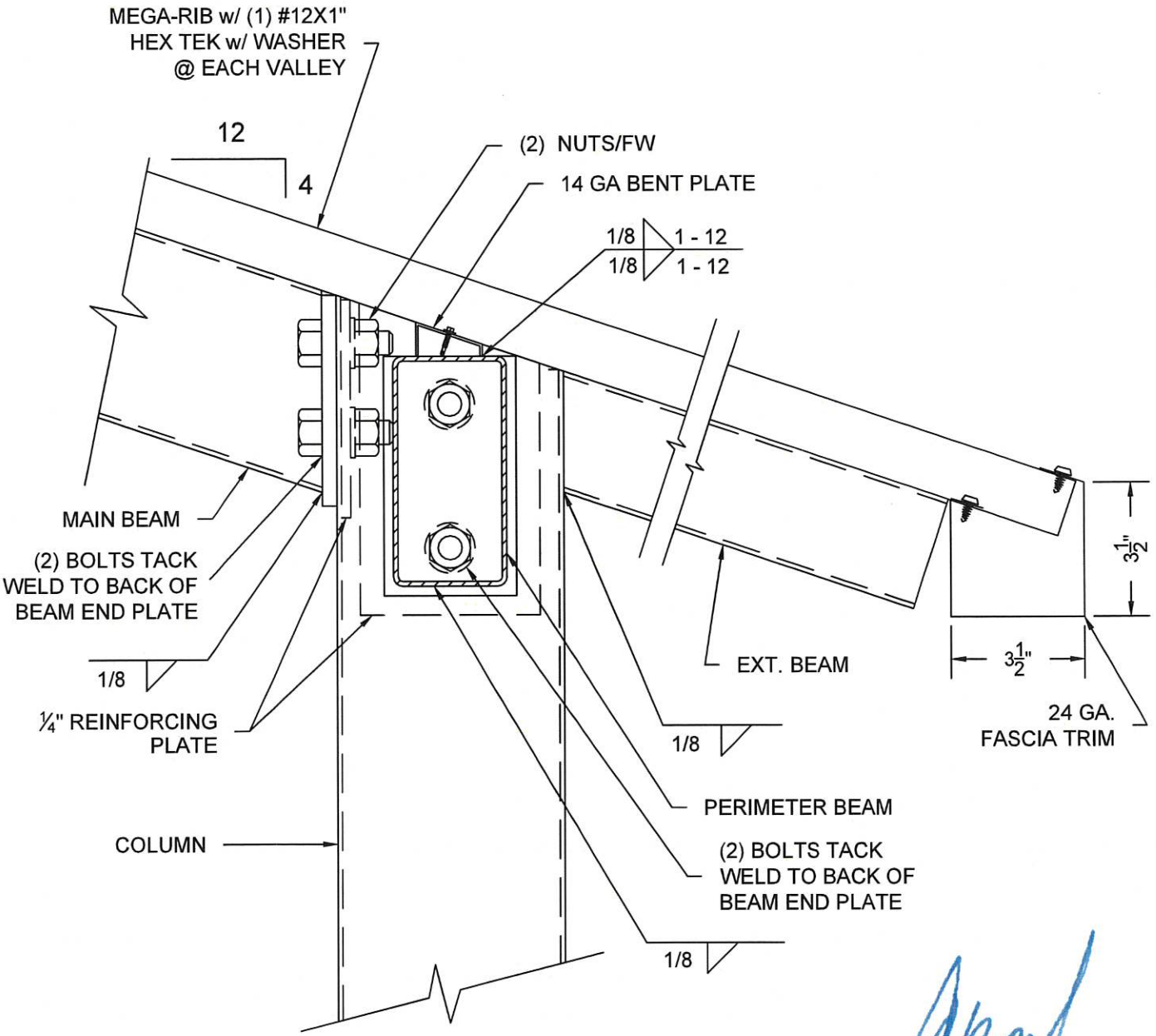
COLORADO LICENSED
ALAN EDWARD MONEY
46358
Oct 05, 2023
PROFESSIONAL ENGINEER

MAROLT, REED PARK
250 S. ELM STREET
FRUITA, CO 81521

#23160

Detail Sheet 11 of 14

CRS, INC.



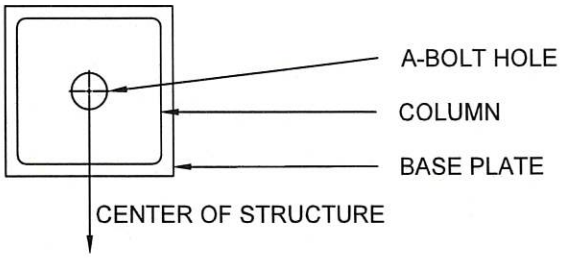

# FASCIA SECTION

NTS

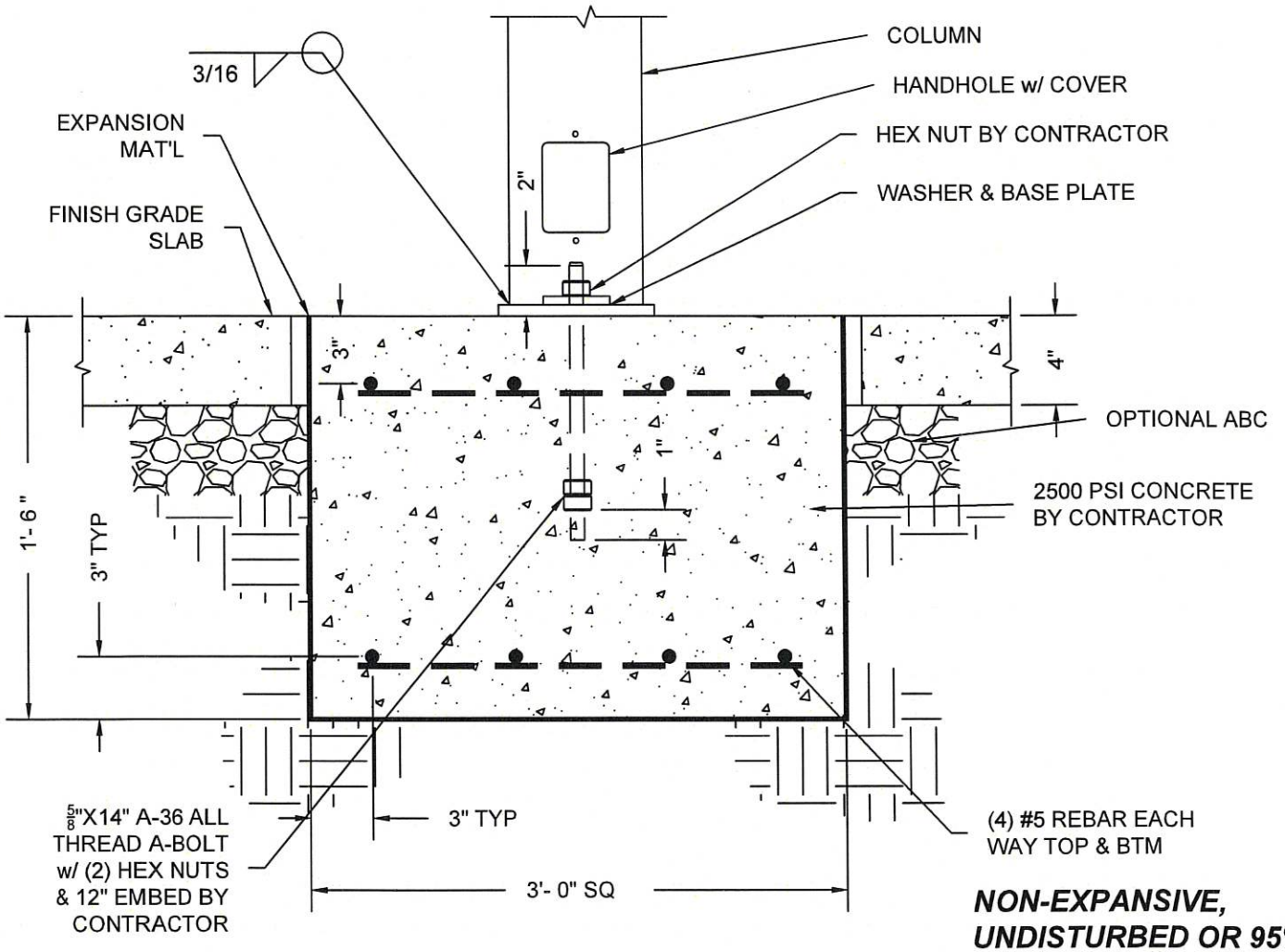
| | | |
|---|---|---|
| MAROLT, REED PARK<br>250 S. ELM STREET<br>FRUITA, CO 81521 | #23160 | Detail Sheet 12 of 14 |

COLORADO LICENSED
ALAN EDWARD MONEY
46358
Oct 05, 2023
PROFESSIONAL ENGINEER

CRS, INC.




***ADJUST FTG DEPTH FOR LOCAL FROST CONDITIONS***




***NON-EXPANSIVE, UNDISTURBED OR 95% COMPACTED SUBGRADE***

# 1-BOLT SURFACE MOUNT SPREAD FOOTING
# 36' CHARLESTON MODEL

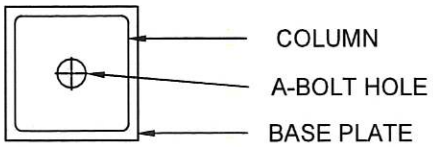
NTS

COLORADO LICENSED
ALAN EDWARD MONEY
46358
Oct 05, 2023
PROFESSIONAL ENGINEER

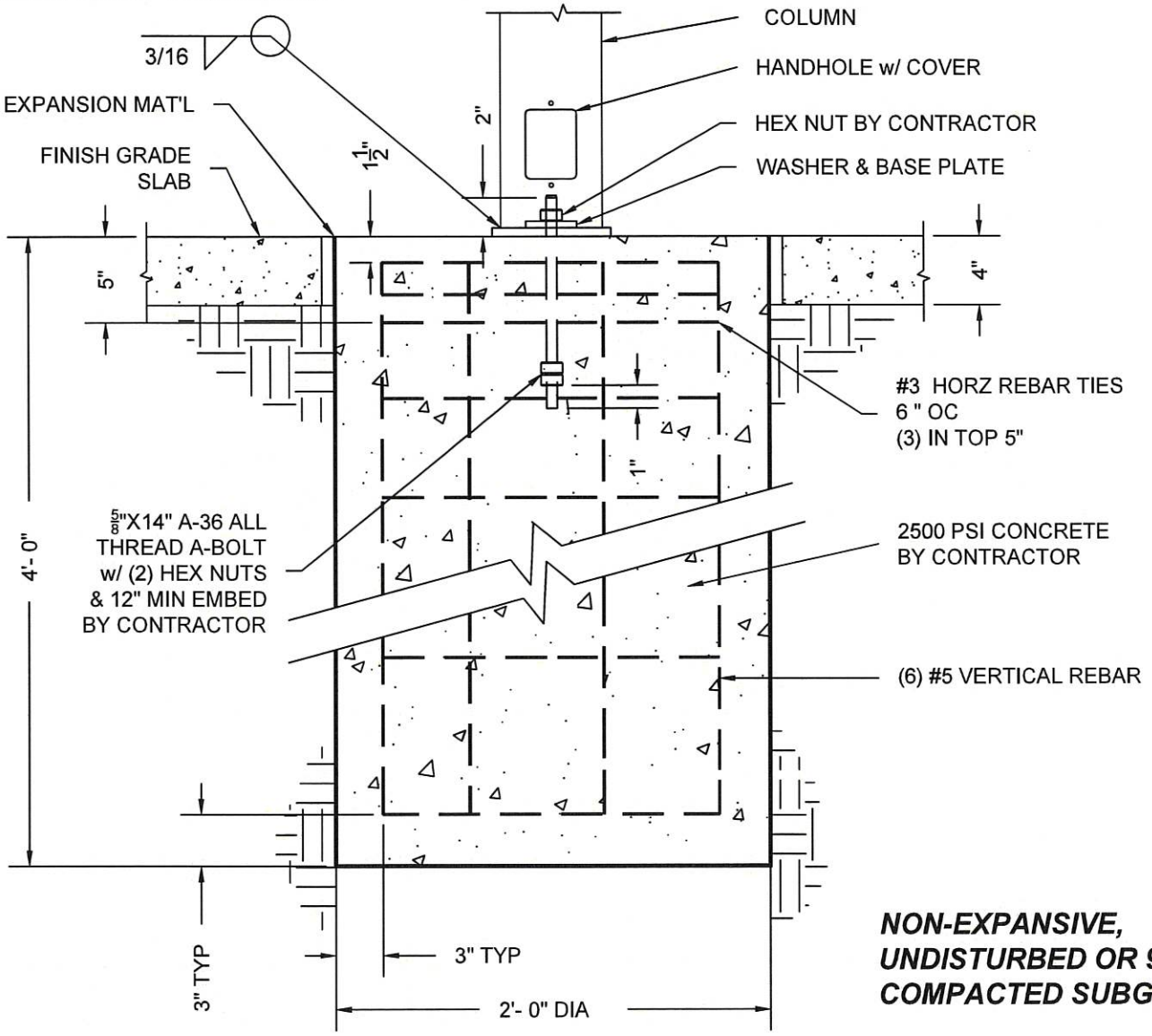
MAROLT, REED PARK #23160
250 S. ELM STREET
FRUITA, CO 81521

Detail Sheet 13 of 14

CRS, INC.




***ADJUST FTG DEPTH FOR LOCAL FROST CONDITIONS***




***NON-EXPANSIVE, UNDISTURBED OR 95% COMPACTED SUBGRADE***

# 1-BOLT SURFACE MOUNT CAISSON FOOTING
# 36' CHARLESTON MODEL

NTS

COLORADO LICENSED
ALAN EDWARD MONEY
46358
Oct 05, 2023
PROFESSIONAL ENGINEER

MAROLT, REED PARK
250 S. ELM STREET
FRUITA, CO 81521

#23160

Detail Sheet 14 of 14

PERMIT SET

# REED PARK ALL WHEEL PARK

## PROJECT ADDRESS

250 S ELM ST.
FRUITA, CO
81521

## PROJECT DIRECTORY

### OWNER'S NAME & ADDRESS

City of Fruita
3324 N Coulson St.
Fruita, CO 81521

PROJECT REPRESENTATIVE:
MARC MANCUSO, PARKS AND RECREATION (970)858-0360, Ext 6400

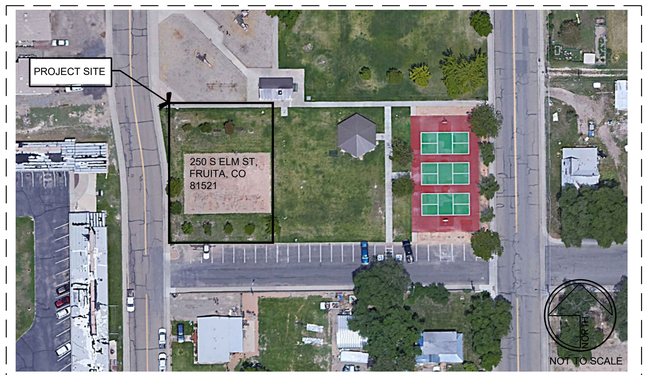
### DESIGN CONSULTANTS

DESIGN WORKSHOP
22860 Two Rivers Road, Suite 102
Basalt, CO 81621

CONTACT:
MARIANNE STUCK, (970) 399 1434

SKATE PARK DESIGNER/ LANDSCAPE ARCHITECT
ACTION Sports Design, llc.
12400 W Hwy 71, Suite 350-348
Austin, TX 78738
CONTACT:
MIKE MCINTYRE (512) 387-5827

## LOCATION MAP




## GENERAL CONSTRUCTION NOTES

1) ALL CONSTRUCTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2) ALL CONSTRUCTION TESTING SHALL BE AT THE DISCRETION OF THE CITY OF FRUITA, CO AS TO THE TYPE AND NUMBER. REFER TO SKATE PARK TECHNICAL SPECIFICATIONS.
3) ALL EQUIPMENT SHALL HAVE RESIDENTIAL MUFFLER SILENCERS PER OSHA REQUIREMENTS AND MUTCD.
4) ANY DETOURING OF TRAFFIC ONTO CITY STREETS SHALL MEET THE TRAFFIC CONTROL REQUIREMENTS OF THE CITY OF FRUITA, CO.
5) CONTRACTOR SHALL CALL DIGGERS HOTLINE AT (800) 242-8511 AND OWNER AT LEAST ONE (1) WEEK PRIOR TO START OF CONSTRUCTION FOR LOCATING UNDERGROUND UTILITIES.
6) THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON THE BEST INFORMATION, HOWEVER, THE CITY OF FRUITA, CO, ENGINEER AND LANDSCAPE ARCHITECT ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION SHOWN, OR FOR THE INADVERTENT OMISSION OF ANY SUCH INFORMATION. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY COMPANIES AND OTHER CONTRACTORS WORKING WITHIN THE LIMITS OF THIS PROJECT.
7) DETOURING OF PEDESTRIANS SHALL BE ACCOMPLISHED WITH ADEQUATE SIGNS AT A SAFE LOCATION.

## SHEET INDEX



## SUBMITTALS

| | |
|---|---|
| 60 % | 05/09/2023 |
| 90 % | 05/19/2023 |
| PERMIT | 10/11/2023 |


Action Sports Design, LLC
12400 W Hwy 71, Suite 350-348
Austin, TX 78738
Phone: 1(512) 387-5827
www.ActionSportsDesign.com


MICHAEL R. McINTYRE
688
9/30/07
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK DETAILS

ISSUE DATE: 10/11/2023

DRAWN BY: ASD

CHECKED BY: ASD

REVISIONS:
1 _____
2 _____
3 _____

SHEET NUMBER: SP0.00

# SKATE PARK - DESIGN CRITERIA

THESE GENERAL STRUCTURAL NOTES APPLY UNLESS OTHERWISE NOTED.

CODE:
COMPLY WITH CURRENT LOCAL BUILDING CODE .

SEISMIC:
SEISMIC USE GROUP
SPECTRAL RESPONSE: Sds = 0.758
Sd1 = 0.432
SITE CLASS "D"

WIND:
BASIC WIND SPEED (V) = 120 MPH
IMPORTANCE FACTOR I = 1.0
WIND EXPOSURE "C"

# SKATE PARK - STRUCTURAL NOTES

1. SPECIAL STRUCTURAL INSPECTION

1.1 THE CITY WILL PROVIDE SPECIAL STRUCTURAL INSPECTION AS REQUIRED BY BUILDING CODES FOR THE FOLLOWING ITEMS:

1.1.1 CONCRETE: DURING THE TAKING OF TEST SPECIMENS & PLACING OF REINFORCED CONCRETE WHERE F'C > 2,500 PSI, EXCEPT SLABS ON GRADE. PROVIDE STATEMENT OF SPECIAL INSPECTIONS PER 1704.3 AND SCHEDULE OF INSPECTIONS (CONTINUOUS / PERIODIC) PER 1705 FOR ALL REQUIRED SPECIAL INSPECTION ELEMENTS. SCHEDULE OF SPECIAL INSPECTIONS WILL BE PROVIDED DURING CONSTRUCTION.

1.1.2 BOLTS INSTALLED IN CONCRETE: DURING INSTALLATION OF EMBEDDED BOLTS IN CONCRETE AND DURING INSTALLATION OF EXPANSION BOLTS & EPOXY BOLTS / REBAR INTO EXISTING CONCRETE.

1.1.3 REINFORCING STEEL: DURING PLACING OF REINFORCING STEEL, FOR ALL CONCRETE REQUIRED TO HAVE SPECIAL INSPECTION BY THE CONCRETE SECTION ABOVE AND PLACING REINFORCING STEEL IN EPOXIED HOLES PER ABOVE.

1.1.4 SHOTCRETE: DURING THE TAKING OF TEST SPECIMENS AND PLACING OF ALL SHOTCRETE.

1.2 SCHEDULING OF SPECIAL STRUCTURAL INSPECTIONS:

1.2.1 THE CONTRACTOR SHALL ALLOW A MINIMUM OF 48 HOURS NOTIFICATION FOR THE SCHEDULING OF SPECIAL STRUCTURAL INSPECTIONS.

2. FOUNDATIONS

2.1 REFER TO THE GEO-TECHNICAL REPORT FOR CONCLUSIONS / RECOMMENDATIONS ON FOUNDATIONS, EXCAVATION, ETC. GEO-TECHNICAL REPORT IS INCLUDED IN THE APPENDIX OF THE PROJECT'S TECHNICAL SPECIFICATIONS.

2.2 THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR ANY GEO-TECHNICAL ASPECTS OF THIS PROJECT. THE CLIENT SHALL EMPLOY A REGISTERED GEO-TECHNICAL ENGINEER TO PERFORM NECESSARY TESTING AND QUALITY CONTROL INSPECTIONS TO ENSURE THAT THE REQUIREMENTS OF THE SOILS REPORT ARE COMPLIED WITH.

3. REINFORCING

3.1 SECURELY TIE ALL REBAR, INCLUDING DOWELS, IN LOCATION BEFORE PLACING CONCRETE OR GROUT.

3.2 WHERE REINFORCING IS SHOWN CONTINUOUS THRU CONSTRUCTION JOINTS, USE LENTON FORM SAVERS DOWEL BAR DEVICES AS MANUFACTURED BY ERICO PRODUCTS, INC. OR APPROVED EQUIVALENT MAY BE USED. SIZES AND TYPES SHALL BE SELECTED TO DEVELOP THE FULL TENSION STRENGTH OF THE BAR PER ICC-ES RESEARCH REPORT.

3.3 DEVELOP AT LEAST 125 PERCENT OF THE TENSION OR COMPRESSION BAR YIELD STRENGTH PER ICC-ES RESEARCH REPORT.

4. STRUCTURAL STEEL

4.1 ASTM A-36 FOR C, MC, ANGLES, AND PLATES.

4.2 ASTM A-53 GRADE B OR A-501 FOR STEEL PIPES

4.3 ASTM A-500 GRADE B, FY=46 KSI FOR TS/HSS TUBE STEEL FOR SIZES UP TO 5/8" THICK.

4.4 ASTM A-307 OR A-36 PLAIN ANCHOR BOLTS.

5. STRUCTURAL STEEL & REINFORCEMENT WELDING

5.1 ALL CONSTRUCTION AND TESTING PER AMERICAN WELDING SOCIETY CODES AND RECOMMENDATIONS. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT CERTIFICATES VALIDATED BY AN INDEPENDENT LAB & HAVING CURRENT EXPERIENCE IN TYPE OF WELD CALLED FOR. THE CONTRACTOR SHALL SUBMIT WELDING CERTIFICATES FOR EACH WELDER PRIOR TO COMMENCING THE WORK.

5.2 WELDING RODS TO BE LOW HYDROGEN TYPE, E70 SERIES, PER AWS D1.1 TYPICALLY EXCEPT E-6010 SERIES FOR STEEL SHEET METAL PER AWS D1.3 AND REINFORCING WELDMENTS PER AWS D1.4. USE E80 SERIES WELDING RODS FOR A706 REBAR. MIG WELDERS MAY ALSO BE USED IF APPROPRIATE FOR FILLING OF SEAMS AND HOLES.

5.3 FIELD INDICATED WELDS MAY BE DONE IN SHOP & SHOP INDICATED WELDS MAY BE DONE IN FIELD ONLY IF SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION.

6. SUPPLEMENTARY NOTES

6.1 THESE CONTRACT DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS, AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, MEANS AND METHODS, BRACING, SHORING, FORMS, SCAFFOLDING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER OR STRUCTURAL OBSERVERS SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

6.2 REINFORCING OR THREADED RODS DRILLED AND EPOXIED INTO EXISTING CONCRETE AS DETAILED ON THE DRAWINGS SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUIVALENT:

6.2.1 HILTI RE-500 SD - ICC ESR-2322

6.2.2 SIMPSON SET-XP - ICC ESR-2508

6.2.3 POWERS PE1000+ - ICC ESR-258

6.3 INSTALLATION OF EPOXIED DOWELS SHALL FOLLOW THE STRICT RECOMMENDATIONS OF THE MANUFACTURER AND THE APPLICABLE ICC-ES REPORT AND HAVE A MINIMUM 9 DIAMETERS EMBEDMENT.

6.4 INSTALLATION SHALL FOLLOW THE STRICT RECOMMENDATIONS OF THE MANUFACTURER AND THE APPLICABLE ICC-ES REPORT. CONTRACTOR SHALL HAVE APPROPRIATE ICC-ES REPORT ON-SITE DURING ALL INSTALLATIONS.

6.5 ANY ENGINEERING DESIGN PROVIDED BY CONTRACTOR OR OTHERS AND SUBMITTED FOR REVIEW SHALL BE BY AN INSURED LICENSED STRUCTURAL ENGINEER WITH CONTINUOUS FIVE YEARS OF EXPERIENCE IN THE TYPE OF DESIGN SUBMITTED. A COPY OF THE LICENSE AND PROOF OF INSURANCE SHALL BE PROVIDED BEFORE STARTING ANY WORK.

# SKATE PARK - GENERAL CONSTRUCTION NOTES

1. GENERAL

1.1 CONSIDER GENERAL NOTES AS APPLYING TO ALL DRAWINGS.

1.2 NOTIFY CLIENT REPRESENTATIVE OF ANY DISCREPANCIES TO THESE PLANS IMMEDIATELY.

1.3 PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND/OR LOCAL BUILDING CODES.

1.4 THE CLIENT SHALL HAVE NO CONTROL OR CHARGE OF, NOR BE RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, SAFETY PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK, THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN CONFORMANCE WITH THE CONTRACT.

1.5 THE CLIENT WILL PROVIDE SPECIAL INSPECTIONS AS REQUIRED BY BUILDING CODES FOR THE FOLLOWING ITEMS:

1.5.1 PLACEMENT OF REINFORCING STEEL.

1.5.2 TAKING OF TEST SPECIMENS AND PLACING OF ALL CONCRETE.

1.5.3 BOLTS IN CONCRETE.

1.5.4 TAKING OF TEST SPECIMENS AND PLACING OF ALL SHOTCRETE.

1.6 THE CONTRACTOR SHALL WARRANTY ALL OF THEIR WORK DURING CONSTRUCTION AND A MINIMUM OF ONE (1) YEAR AFTER THE PROJECT IS ACCEPTED AS COMPLETE.

2. CONCRETE WORK

2.1 CONCRETE MIXES SHALL BE DESIGNED BY A TESTING LABORATORY AND SUBMITTED TO THE CLIENT REPRESENTATIVE FOR APPROVAL. MIXES SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS, REGARDLESS OF OTHER MINIMUM REQUIREMENTS SPECIFIED HEREIN OR ON THE DRAWINGS. DESIGNS SHALL SHOW PROPORTIONS OF CEMENT, FINE AND COARSE AGGREGATES AND WATER, AND GRADATION OF COMBINED AGGREGATES.

2.2 CEMENT: ASTM C150. CEMENT SHALL BE OF SAME BRAND, TYPE AND SOURCE THROUGHOUT PROJECT. WHERE AGGREGATES ARE POTENTIALLY REACTIVE, USE LOW ALKALI CEMENT.

2.3 AGGREGATES SHALL CONFORM TO ASTM C33.

2.4 NO ADMIXTURES WITHOUT APPROVAL. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. CONCRETE SHALL NOT BE IN CONTACT WITH ALUMINUM.

2.5 CONCRETE MIX DESIGN - CAST-IN-PLACE

2.5.1 PROVIDE MIX DESIGNS THAT WILL MEET THE MINIMUM REQUIREMENTS LISTED BELOW. INCREASE CEMENT CONTENT OVER THAT SHOWN, IF REQUIRED TO OBTAIN THE COMPRESSIVE STRENGTH:

| MIN. 28-DAY COMPRESSIVE STRENGTH (PSI) | MIN. CEMENT CONTENT (POUNDS) | MAX. SLUMP (INCHES) | MAX. AGGREGATE SIZE (INCHES) | MAX. AIR ENTRAINING AT END OF HOSE (PERCENT) |
|---|---|---|---|---|
| 4000 | 480 | 4" MAX. | 1" | 3% - 5% |

2.6 CONCRETE MIX DESIGN - SHOTCRETE

2.6.1 ACI STANDARD 506, LATEST EDITION, "SPECIFICATION FOR MATERIALS, PROPORTIONING AND APPLICATION OF SHOTCRETE" AND ACI 506.2, LATEST EDITION, "RECOMMENDED PRACTICES FOR SHOTCRETE" SHALL BE FOLLOWED.

2.6.2 MIX DESIGNS FOR SHOTCRETE CONTAINING FLY ASH SHALL BE BY AN INDEPENDENT TESTING LABORATORY. ONLY ASTM C618 CLASS F FLY ASH SHALL BE USED. THE AMOUNT OF FLY ASH USED SHALL NOT EXCEED 20 PERCENT BY WEIGHT OF THE COMBINED WEIGHT OF FLY ASH PLUS CEMENT.

2.6.3 PROVIDE MIX DESIGNS THAT WILL MEET THE MINIMUM REQUIREMENTS LISTED BELOW. INCREASE CEMENT CONTENT OVER THAT SHOWN, IF REQUIRED TO OBTAIN THE COMPRESSIVE STRENGTH:

| MIN. 28-DAY COMPRESSIVE STRENGTH (PSI) | MIN. CEMENT CONTENT (POUNDS) | MAX. SLUMP (INCHES) | MAX. AGGREGATE SIZE (INCHES) | MAX. AIR ENTRAINING AT END OF HOSE (PERCENT) |
|---|---|---|---|---|
| 4000 | 600 | 3" MAX. | 3/8" | 3% - 5% |

2.6.4 SURFACE PREPARATION: EXPOSED EXISTING CONCRETE SHALL BE SANDBLASTED CLEAN. SURFACES SHALL BE FOLLOWED BY WETTING AND DAMP DRYING JUST PRIOR TO SHOTCRETE APPLICATION.

2.6.5 ANY REBOUND OR ACCUMULATED LOOSE AGGREGATE SHALL BE REMOVED FROM THE SURFACES TO BE COVERED PRIOR TO PLACING THE INITIAL OR ANY SUCCEEDING LAYERS OF SHOTCRETE. REBOUND SHALL NOT BE REUSED AS AGGREGATE.

2.6.6 JOINTS IN WALL POURS ARE PERMISSIBLE. AT JOINTS, SHOTCRETE SHALL BE SLOPED TO A THIN EDGE. BEFORE PLACING ADDITIONAL MATERIAL, ALL SURFACES SHALL BE THOROUGHLY CLEANED AND WETTED AND ALL REINFORCING STEEL SHALL BE BRUSHED FREE OF LATENT SHOTCRETE MATERIAL.

2.6.7 ANY IN-PLACE SHOTCRETE MATERIAL WHICH EXHIBITS SAGS OR SLOUGHS, SEGREGATION, HONEYCOMBING, SAND POCKETS OR OTHER OBVIOUS DEFECTS SHALL BE REMOVED AND REPLACED.

2.6.8 TESTING AND INSPECTION OF IN-PLACE SHOTCRETE SHALL BE IN ACCORDANCE WITH CURRENT LOCAL BUILDING CODE.

2.7 CONCRETE SHALL BE PLACED WITHIN 90 MINUTES OF BATCHING AND SHALL NOT EXCEED A TEMPERATURE OF 90°F UNLESS PRE-APPROVED BY CITY / COUNTY REPRESENTATIVE.

2.8 CONCRETE CYLINDERS SHALL BE TAKEN AND TESTED PER CODE BY A CLIENT-PROVIDED TESTING LABORATORY FOR STRUCTURAL POURS, ONE (1) FOR EVERY FIFTY (50) YARDS OF CONCRETE. HISTORICAL DATA SHALL BE SUBMITTED AND APPROVED PRIOR TO THE POUR , IF NO TEST SAMPLES ARE TAKEN FOR POURS LESS THAN FIFTY (50) CUBIC YARDS.

2.9 DURING THE CURING PERIOD, CONCRETE SHALL BE MAINTAINED AT A TEMPERATURE ABOVE 40°F AND IN MOIST CONDITION. FOR INITIAL CURING, CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR 24 HOURS AFTER PLACEMENT IS COMPLETE. FINAL CURING SHALL CONTINUE FOR SEVEN DAYS AFTER PLACEMENT AND SHALL CONSIST OF APPLICATION OF CURING COMPOUND PER ASTM C309. APPLY AT A RATE SUFFICIENT TO RETAIN MOISTURE, BUT NOT LESS THAN ONE (1) GALLON [4.55L] PER 200 SQUARE FEET. COVER CONCRETE WITH POLYETHYLENE PLASTIC TO MAINTAIN TEMPERATURE IF NECESSARY. LAP SEAMS IN THE PLASTIC SIX INCHES (6") AND TAPE, WEIGH DOWN THE PLASTIC AS NEEDED.

2.10 THE CONTRACTOR SHALL SUBMIT PRODUCTS / METHODS FOR APPROVAL TO THE CLIENT REPRESENTATIVE TO FIX ALL CRACKS AND DISPLACEMENTS LARGER THAN 1/16".

2.11 ALL CONCRETE WHICH DURING THE LIFE OF THE STRUCTURE WILL BE SUBJECTED TO FREEZING TEMPERATURES WHILE WET, SHALL HAVE A WATER CEMENT RATIO NOT EXCEEDING 0.53 BY WEIGHT AND SHALL CONTAIN ENTRAINED AIR AS PER ACI 301. SUCH CONCRETE SHALL INCLUDE EXTERIOR SLABS, PERIMETER FOUNDATIONS, EXTERIOR CURBS AND GUTTERS, ETC.

2.12 CONDUITS, PIPES, AND SLEEVES EMBEDDED IN CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ICC.

2.13 USE INTERMEDIATE GRADE ASTM A615, GRADE 60 FOR ALL REINFORCING. USE ASTM A706, GRADE 60 FOR ALL REINFORCING THAT IS TO BE WELDED. USE A108, GRADE 60, FOR ALL WELDED ANCHORS REFER TO AWS SPEC FOR WELDING WITHOUT PREHEAT. WELDING OF REINFORCING BARS TO BE IN ACCORDANCE WITH ALL BUILDING CODES.

2.14 OBSERVE FOLLOWING REINFORCEMENT CLEARANCES:

3" AT SURFACES POURED AGAINST EARTH

2" AT FORMED SURFACES EXPOSED TO EARTH OR WEATHER

1-1/2" AT OTHER SURFACES, EXCEPT WHERE SHOWN OTHERWISE.

2.15 SECURE REINFORCING, ANCHOR BOLTS, INSERTS, ETC. RIGIDLY IN PLACE PRIOR TO POURING CONCRETE.

2.16 SUPPORT HORIZONTAL REINFORCING ON GALVANIZED CHAIRS OR OTHER APPROVED METHOD (MORTAR BLOCKS ARE UNACCEPTABLE) OF SUPPORT FOR FOOTINGS AND SLABS ON GRADE.

2.17 REMOVE FORMS AT FOLLOWING MINIMUM TIMES AFTER POURING:

AT SLAB EDGES - 24 HOURS

AT WALLS LESS THAN 4'-0' HIGH - 36 HOURS.

2.18 MAKE ALL HOOKS ACI 318-11 STANDARD HOOKS UNLESS OTHERWISE NOTED. PROVIDE 135 DEGREE MINIMUM TURN, PLUS 4" EXTENSION AT FREE ENDS OF COLUMN PILASTER TIES.

2.19 MAKE LAPS CONTACT SPLICES, DEVELOPMENT LENGTHS, HOOK EMBEDMENT PER ACI 318-11, UNLESS OTHERWISE NOTED. STAGGER LAP SPLICES WHERE POSSIBLE.

2.20 ALL REBAR SHALL BE COLD BENT.

2.21 WHERE REINFORCING IS SHOWN CONTINUOUS THRU CONSTRUCTION JOINTS, LENTON FORM SAVERS DOWEL BAR SPLICE DEVICES AS MANUFACTURED BY ERICO PRODUCTS, INC. OR EQUIVALENT MAY BE USED. SIZES AND TYPES SHALL BE SELECTED TO DEVELOP THE FULL TENSION STRENGTH OF THE BAR PER ICC-ES RESEARCH REPORT.

2.22 MINIMUM CLEARANCE BETWEEN PARALLEL REINFORCEMENT BARS SHALL BE 2-1/2". LAP SPLICES IN REINFORCING BARS SHALL BE BY THE NON-CONTRACT LAP SPLICE METHOD WITH AT LEAST 2" CLEARANCE BETWEEN BARS.

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MICHAEL R. McINTYRE
668
9/30/07
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK NOTES

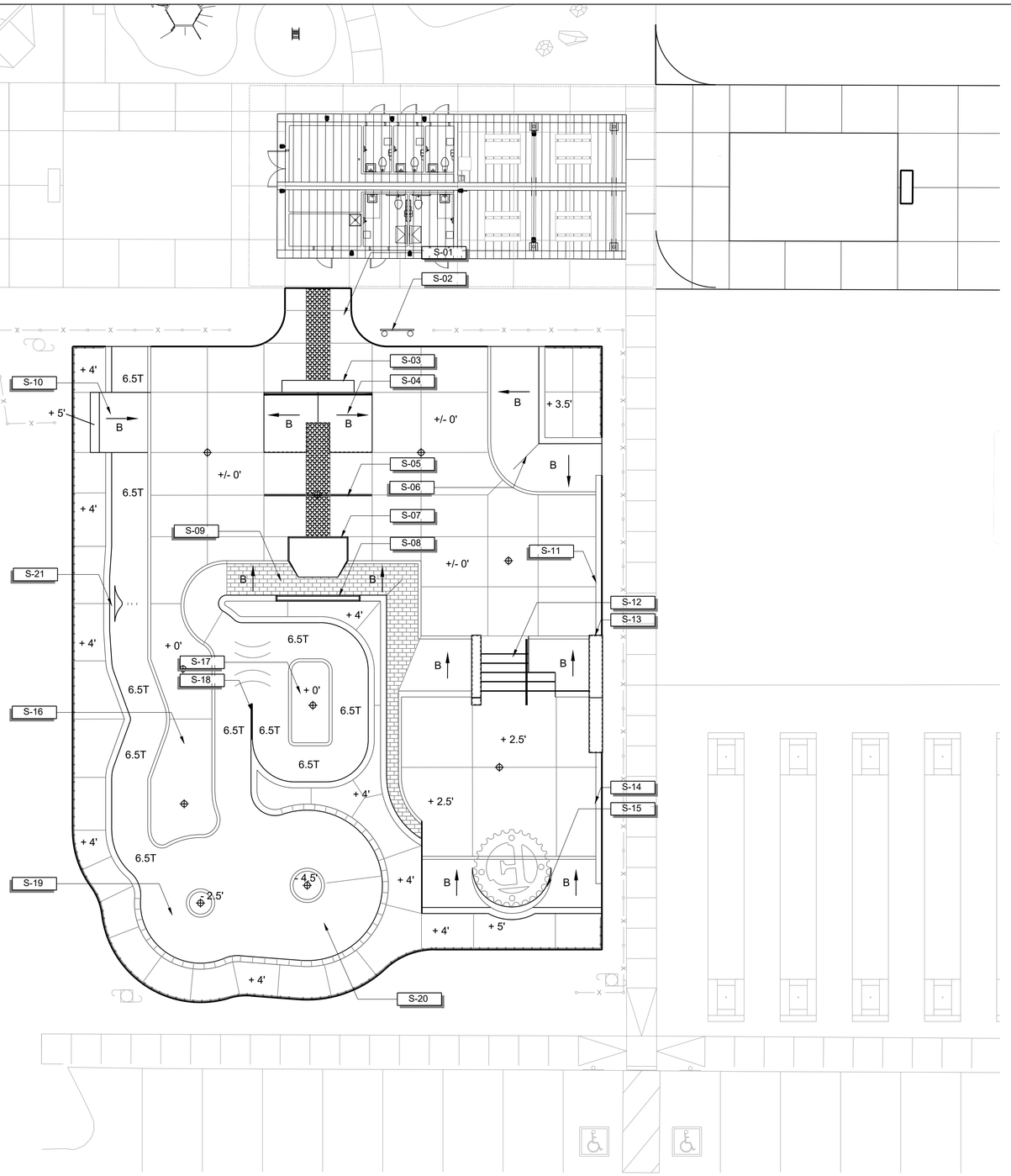
ISSUE DATE:
10/11/2023

DRAWN BY:
ASD

CHECKED BY:
ASD

REVISIONS:
1
2
3

SHEET NUMBER:
SP1.00




## SKATE PARK FEATURE LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| S-01 | SKATE PARK ENTRY |
| S-02 | RULES AND REGULATIONS SIGN |
| S-03 | GRIND LEDGE |
| S-04 | A-FRAME WITH RAIL AND BUMP TO BUMP GAP |
| S-05 | FLAT RAIL |
| S-06 | 3'-6" BANKED HIP |
| S-07 | MANUAL PAD IN BANK |
| S-08 | BANK TO CURB |
| S-09 | STAMPED BRICK BANK |
| S-10 | 5' LAID BACK BANK |
| S-11 | SLAPPY CURB |
| S-12 | 5 STAIR WITH HUBBA, HANDRAIL, AND STEP UP GAP |
| S-13 | FLAT-DOWN HUBBA |
| S-14 | SLAPPY CURB |
| S-15 | MELLOW BANK WITH FLIP BANK EXTENSION |
| S-16 | FLOW BOWL |
| S-17 | MINI RAMP ZONE |
| S-18 | SPINE TRANSFER |
| S-19 | 6'-6" DEEP POCKET WITH POOL COPING |
| S-20 | 8'-6" DEEP POCKED WITH POOL COPING |
| S-21 | LOVE SEAT HIP WITH QP EXTENSION |
| T | RADIUS OF WALL, REFER TO SKATE PARK SECTIONS |
| B → | BANK / EMBANKMENT WALL WITH SLOPE AND/OR RADIUS AT BASE, REFER TO SKATE PARK SECTIONS |

NORTH

0 5 10 20

SCALE : 1" = 10'-0"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LICENSED LANDSCAPE ARCHITECT

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ISSUE DATE:
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ASD

CHECKED BY:
ASD

REVISIONS:
1 _____
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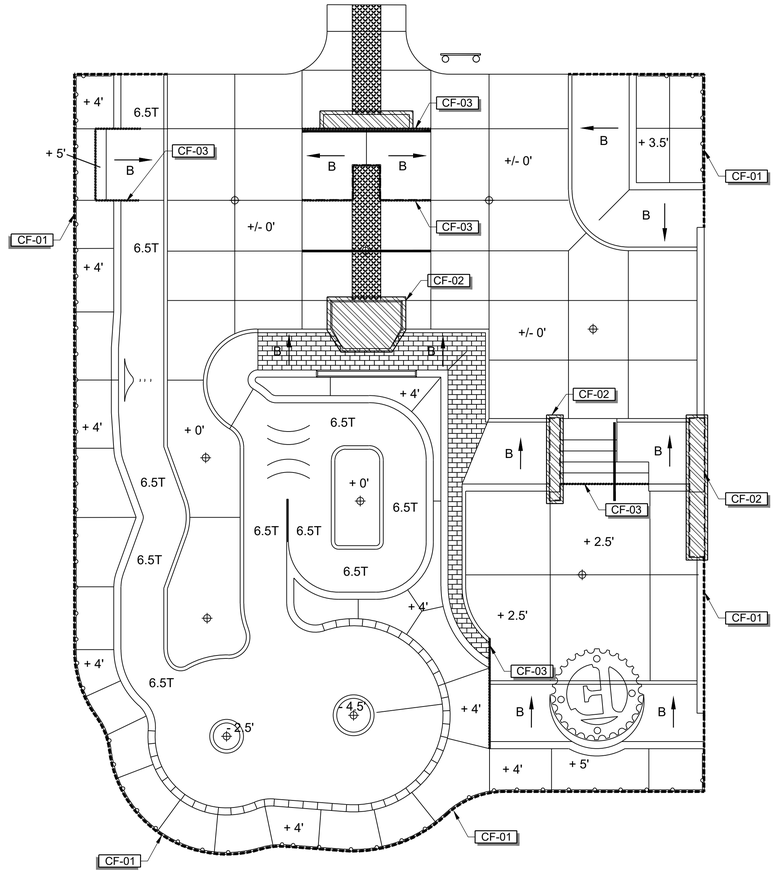
SHEET NUMBER:
SP1.01




## CONCRETE FOUNDATION & WALL LEGEND

| SYMBOL | | DESCRIPTION | STRENGTH | CURE TIME | FINISH | DETAIL |
|---|---|---|---|---|---|---|
| ---------- | CF-01 | TURNDOWN WALL ADJ. TO GRADE | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 03/SP5.04 |
| ▨ | CF-02 | LEDGE / RAIL FOUNDATION - THICKENED TOP DECK, BANK, OR STAIRS | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 01-02/SP5.02 |
| ---------- | CF-03 | TURNDOWN WALL ON THICKENED DECK | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 02/SP5.04 |

## CONCRETE MATERIAL NOTES

1. CONTRACTOR TO SUBMIT POUR SCHEDULE FOR REVIEW AND APPROVAL BY SKATE PARK DESIGNER.
2. CONTRACTOR TO SUBMIT PROPOSED START AND STOP FORM LOCATIONS FOR ALL CONCRETE WORK SHOWN FOR REVIEW AND APPROVAL BY SKATE PARK DESIGNER.
3. CONTRACTOR TO BUILD ALL TEMPLATES AND FORMS WITH TRUE ARCS AND TANGENTS MATCHING SECTIONS AND PROFILE DIMENSIONS WITHIN THE CONSTRUCTION DOCUMENTS.
4. CONTRACTOR TO POUR ON-SITE SAMPLES OF CAST-IN-PLACE AND SHOTCRETE WORK PER THE SPECIFICATIONS. SAMPLES CANNOT BE PART OF THE PROJECT WORK.
5. ALL CONCRETE FINISH WORK TO BE PERFORMED BY QUALIFIED CONTRACTOR WHO IS ABLE TO MEET THE TOLERANCES MENTIONED IN THE PROJECT'S TECHNICAL SPECIFICATIONS.
6. FINISH WORK NOT MEETING THE TOLERANCES, FINISH AND TOOLING FROM ON-SITE SAMPLES WILL BE REJECTED.
7. CONTRACTOR TO VERIFY FEATURE ELEVATIONS WITH SECTIONS. IF A DISCREPANCY OCCURS, CONTRACTOR SHALL CONTACT SKATE PARK DESIGNER IMMEDIATELY.
8. ALL BANKS LESS THAN 3' HIGH MAY BE CAST IN PLACE, IN LIEU OF SHOTCRETE, UPON SKATE PARK DESIGNER'S APPROVAL.

## CONCRETE POUR SEQUENCE GUIDELINES

CONTRACTOR TO COORDINATE ALL PROJECT SAMPLE REVIEWS, PROGRESS SITE VISITS WITH CLIENT REPRESENTATIVE AND/OR SKATE PARK DESIGNER IN ADVANCE. CONTRACTOR TO SUBMIT POUR SCHEDULE FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.

THE FOLLOWING IS A SEQUENCING GUIDELINE FOR THE CONTRACTOR'S SUBMITTAL:

1. INSTALL ALL CAST-IN-PLACE FORMS & METAL FABRICATIONS.
2. POUR ALL CAST-IN-PLACE LEDGES, BREAK FORMS AND FINISH.
3. INSTALL ALL METAL FABRICATIONS FOR SHOTCRETE AREAS AND FORM WORK.
4. INSTALL ALL REQUIRED REBAR PER PLANS AND SPECIFICATIONS.
5. INSTALL ALL SHOTCRETE AND SPECIALTY POURS PER PLANS AND SPECIFICATIONS.
6. BREAK ALL SHOTCRETE AND SPECIALTY FORMS PRIOR TO POURING FLATWORK.
7. POUR ALL TOP DECKS.
8. POUR ALL BOTTOM AREAS LAST.

NORTH

0 5 10 20

SCALE : 1" = 10'-0"

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MICHAEL R. McINTYRE
688
9/30/07
Original Date of Licensure
LICENSED LANDSCAPE ARCHITECT
STATE OF COLORADO

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK
CONCRETE FOUNDATION PLAN

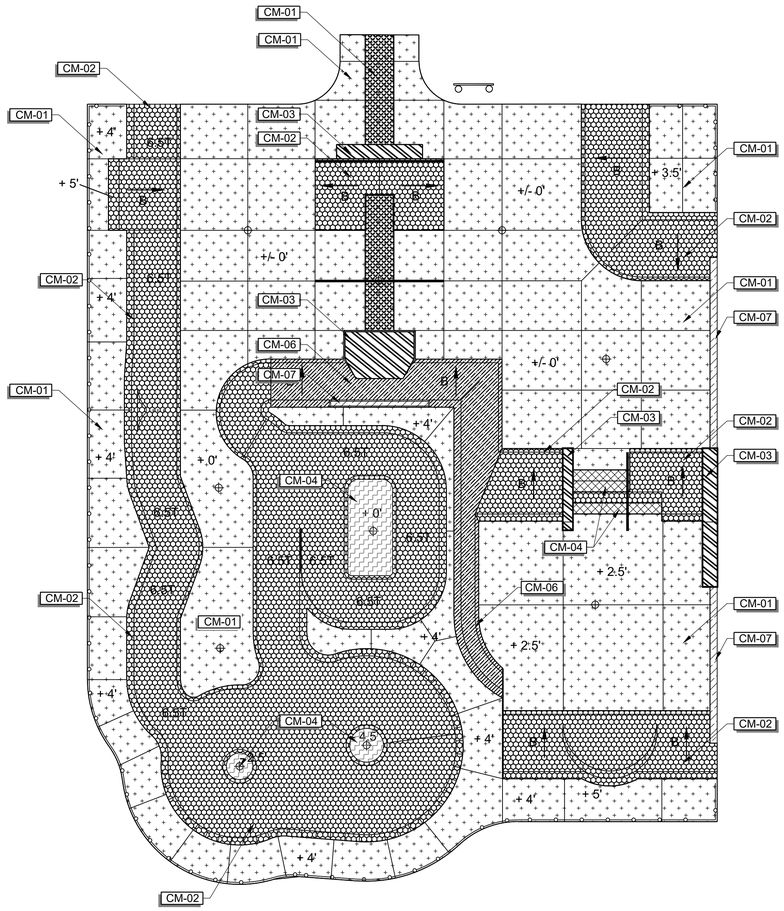
ISSUE DATE:
10/11/2023

DRAWN BY:
ASD

CHECKED BY:
ASD

REVISIONS:
1 _____
2 _____
3 _____

SHEET NUMBER:
SP1.02




## CONCRETE MATERIAL LEGEND

| SYMBOL | DESCRIPTION | STRENGTH | CURE TIME | FINISH | DETAIL |
|---|---|---|---|---|---|
| CM-01 | 5" THK. CONCRETE SLAB | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 01/SP5.01 |
| CM-02 | 6" THK. SHOTCRETE BOWL / BANK | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 06-07/SP5.01 |
| CM-03 | CAPPED CAST IN PLACE LEDGE | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 01-02/SP5.02 08/SP5.02 |
| CM-04 | CAST IN PLACE STAIRS | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 03/SP5.02 |
| CM-05 | 6" THK. FLAT BOTTOM | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 01/SP5.03 |
| CM-06 | 6" THK. SHOTCRETE BANK WITH "BRICK" STENCIL | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 07/SP5.05 |
| CM-07 | CAST IN PLACE CURB | 4,000 P.S.I. | 28 DAYS | SMOOTH TROWEL | 06/SP5.06 |

## CONCRETE MATERIAL NOTES

1. CONTRACTOR TO SUBMIT POUR SCHEDULE FOR REVIEW AND APPROVAL BY SKATE PARK DESIGNER.
2. CONTRACTOR TO SUBMIT PROPOSED START AND STOP FORM LOCATIONS FOR ALL CONCRETE WORK SHOWN FOR REVIEW AND APPROVAL BY SKATE PARK DESIGNER.
3. CONTRACTOR TO BUILD ALL TEMPLATES AND FORMS WITH TRUE ARCS AND TANGENTS MATCHING SECTIONS AND PROFILE DIMENSIONS WITHIN THE CONSTRUCTION DOCUMENTS.
4. CONTRACTOR TO POUR ON-SITE SAMPLES OF CAST-IN-PLACE AND SHOTCRETE WORK PER THE SPECIFICATIONS. SAMPLES CANNOT BE PART OF THE PROJECT WORK.
5. ALL CONCRETE FINISH WORK TO BE PERFORMED BY QUALIFIED CONTRACTOR WHO IS ABLE TO MEET THE TOLERANCES MENTIONED IN THE PROJECT'S TECHNICAL SPECIFICATIONS.
6. FINISH WORK NOT MEETING THE TOLERANCES, FINISH AND TOOLING FROM ON-SITE SAMPLES WILL BE REJECTED.
7. CONTRACTOR TO VERIFY FEATURE ELEVATIONS WITH SECTIONS. IF A DISCREPANCY OCCURS, CONTRACTOR SHALL CONTACT SKATE PARK DESIGNER IMMEDIATELY.
8. ALL BANKS LESS THAN 3' HIGH MAY BE CAST IN PLACE, IN LIEU OF SHOTCRETE, UPON SKATE PARK DESIGNER'S APPROVAL.

## CONCRETE POUR SEQUENCE GUIDELINES

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2. POUR ALL CAST-IN-PLACE LEDGES, BREAK FORMS AND FINISH.
3. INSTALL ALL METAL FABRICATIONS FOR SHOTCRETE AREAS AND FORM WORK.
4. INSTALL ALL REQUIRED REBAR PER PLANS AND SPECIFICATIONS.
5. INSTALL ALL SHOTCRETE AND SPECIALTY POURS PER PLANS AND SPECIFICATIONS.
6. BREAK ALL SHOTCRETE AND SPECIALTY FORMS PRIOR TO POURING FLATWORK.
7. POUR ALL TOP DECKS.
8. POUR ALL BOTTOM AREAS LAST.

NORTH

0 5 10 20

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MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK CONCRETE MATERIAL PLAN

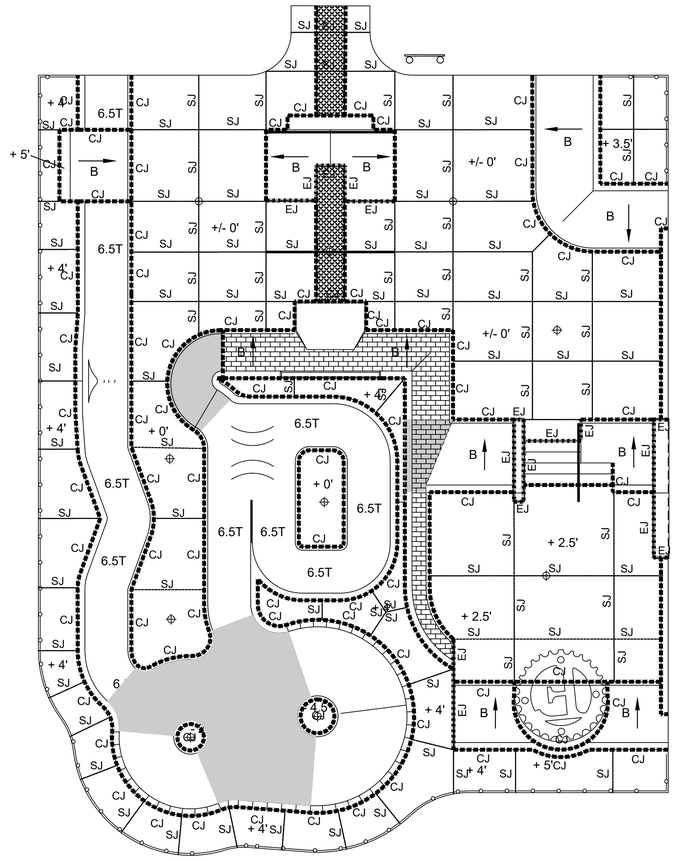
ISSUE DATE: 10/11/2023

DRAWN BY: ASD

CHECKED BY: ASD

REVISIONS:
1 _____
2 _____
3 _____

SHEET NUMBER: SP1.03




## CONCRETE JOINTING LEGEND

| SYMBOL | DESCRIPTION | DETAIL |
|---|---|---|
| ▬ ▬ ▬ | CJ - CONSTRUCTION JOINT | 02-04,07 /SP5.03 |
| ..... | SJ - SAWCUT JOINT | 05/SP5.03 |
| ▬ ▬ ▬ | EJ - EXPANSION JOINT (SEE NOTES 10 & 11) | 06/SP5.03 |
| | SCULPTURAL BLEND ZONE PROVIDE CUSTOM CONCRETE BLENDING FOR SMOOTH TRANSITIONS. THESE AREAS TYPICALLY REQUIRE GREATER HAND WORK AND QUALITY CONTROL TO ENSURE THAT BLENDS DO NOT RESULT IN IRREGULAR CONCRETE SURFACE CONDITIONS. THESE AREAS NEED TO BE REVIEWED AND APPROVED AT THE FINE GRADING STAGE, PRIOR TO CONCRETE PLACEMENT, BY THE SKATE PARK DESIGNER. | |

## CONCRETE JOINTING NOTES

1. CONSTRUCT JOINTS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE.
2. CONSTRUCTION JOINTS: INSTALL SO STRENGTH AND APPEARANCE OF CONCRETE ARE NOT IMPAIRED, AT LOCATIONS INDICATED AND APPROVED BY SKATE PARK DESIGNER.
3. PLACE JOINTS PERPENDICULAR TO MAIN REINFORCEMENT. CONTINUE REINFORCEMENT ACROSS CONSTRUCTION JOINTS, UNLESS OTHERWISE INDICATED.
4. SAWED JOINTS: FORM CONTRACTION JOINTS WITH POWER SAWS EQUIPPED WITH SHATTERPROOF ABRASIVE OR DIAMOND-RIMMED BLADES. CUT 1/8-INCH WIDE JOINTS INTO CONCRETE WHEN CUTTING ACTION WILL NOT TEAR, ABRADE, OR OTHERWISE DAMAGE SURFACE AND BEFORE CONCRETE DEVELOPS RANDOM CONTRACTION CRACKS.
5. ALL CONTROL JOINTS SHALL BE SEALED PER REFERENCED DETAILS.
6. CLEAN ALL JOINTS THOROUGHLY DEBRIS AND DUST FREE PRIOR TO ANY SEALANT APPLICATION.
7. CONCRETE MUST BE CURED TO SPECIFIED STRENGTH PRIOR TO APPLYING SEALANT.
8. CONTRACTOR MUST SUBMIT A POUR SCHEDULE DESIGNATING ALL START AND STOP FORM LOCATIONS PRIOR TO START OF CONSTRUCTION.
9. THE JOINTING PLAN IS DIAGRAMMATIC IN NATURE. CONTRACTOR TO APPLY ADDITIONAL JOINTING AND CRACK PREVENTION MEASURES AS NECESSARY.
10. EXPANSION JOINT AT FLATWORK: 1/4" WIDE PER 06/SP5.03.
11. EXPANSION JOINT BETWEEN WALL / CURB AND FLATWORK: 1/2" WIDE WITH ELASTROMERIC SEALANT, TOOL FLAT & SMOOTH SIKAFLEX-1C-SL OR EQUAL. PROVIDE BOND BREAKER MEMBRANE 1/2" MIN. FROM SURFACE. MINIMUM CAULKING THICKNESS WITH BOND BREAKER IN PLACE IS 1/2".

NORTH

0 5 10 20

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MICHAEL R. McINTYRE 658 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK
CONCRETE JOINTING PLAN

ISSUE DATE:
10/11/2023

DRAWN BY:
ASD

CHECKED BY:
ASD

REVISIONS:
1 _____
2 _____
3 _____

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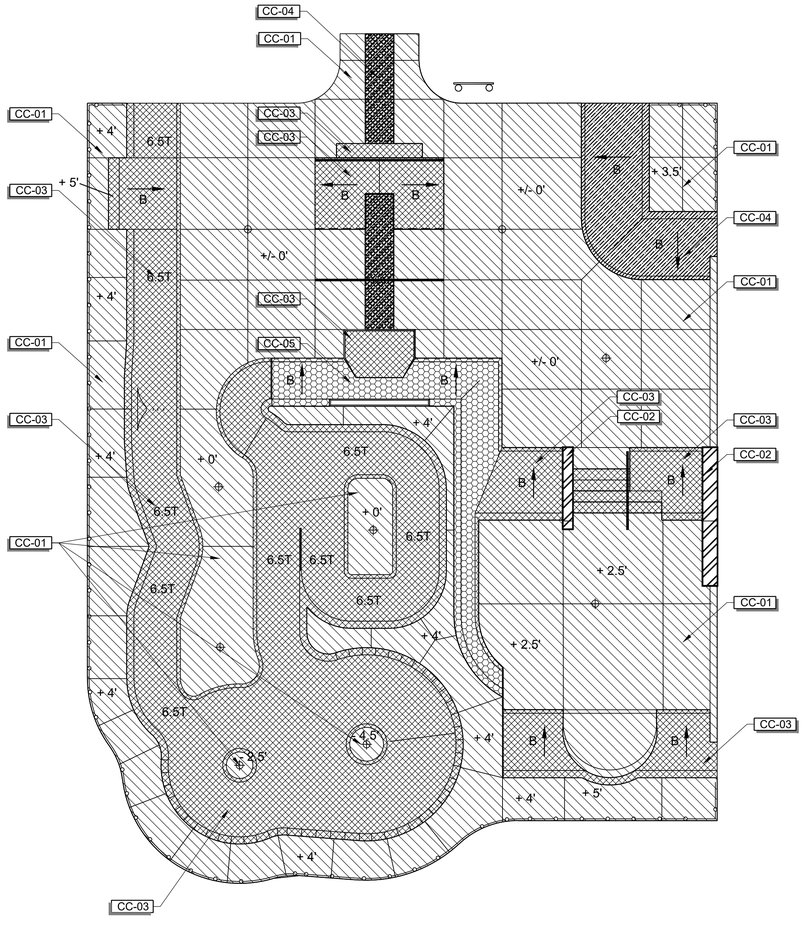


## CONCRETE COLOR LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| CC-01 | NATURAL GRAY |
| CC-02 | CANTILEVERED LEDGE<br>CAP: NATURAL GRAY LEDGE<br>BASE: TERRA COTTA / DAVIS COLORS 10134 (OR APPROVED EQUAL) |
| CC-03 | GRAPHITE / DAVIS COLORS 8084 (OR APPROVED EQUAL), INTEGRAL COLOR |
| CC-04 | TERRA COTTA / DAVIS COLORS 10134, INTEGRAL COLOR |
| CC-05 | TERRA COTTA / DAVIS COLORS 10134, INTEGRAL COLOR<br>SPECIAL PAVING - STENCILED BRICK PATTERN. METHOD OF APPLICATION TO BE SELECTED. CONTRACTOR TO SUBMIT PATTERN AND COLOR SAMPLES FOR APPROVAL |

## CONCRETE POUR SEQUENCE GUIDELINES

CONTRACTOR TO COORDINATE ALL PROJECT SAMPLE REVIEWS, PROGRESS SITE VISITS WITH CLIENT REPRESENTATIVE AND/OR SKATE PARK DESIGNER IN ADVANCE. CONTRACTOR TO SUBMIT POUR SCHEDULE FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.

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1. INSTALL ALL CAST-IN-PLACE FORMS & METAL FABRICATIONS.
2. POUR ALL CAST-IN-PLACE LEDGES, BREAK FORMS AND FINISH.
3. INSTALL ALL METAL FABRICATIONS FOR SHOTCRETE AREAS AND FORM WORK.
4. INSTALL ALL REQUIRED REBAR PER PLANS AND SPECIFICATIONS.
5. INSTALL ALL SHOTCRETE AND SPECIALTY POURS PER PLANS AND SPECIFICATIONS.
6. BREAK ALL SHOTCRETE AND SPECIALTY FORMS PRIOR TO POURING FLATWORK.
7. POUR ALL TOP DECKS.
8. POUR ALL BOTTOM AREAS LAST.

## COLORED CONCRETE CURING NOTES

1. CONTRACTOR TO ENSURE THAT COLORED CONCRETE IS CURED AND SEALED AFTER EACH POUR PRIOR TO POURING ADJACENT COLORED CONCRETE SURFACES TO AVOID BLEEDING AND DUSTING.
2. COLORED CONCRETE SHALL BE CURED WITH AN APPROVED CURING AID. CONTRACTOR TO SUBMIT CURING AID PRODUCT SPECIFICATION TO CLIENT REPRESENTATIVE FOR APPROVAL.

NORTH

0 5 10 20

SCALE : 1" = 10'-0"

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MICHAEL R. McINTYRE
688
9/30/07
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK
CONCRETE COLOR PLAN

ISSUE DATE:
10/11/2023

DRAWN BY:
ASD

CHECKED BY:
ASD

REVISIONS:
1
2
3

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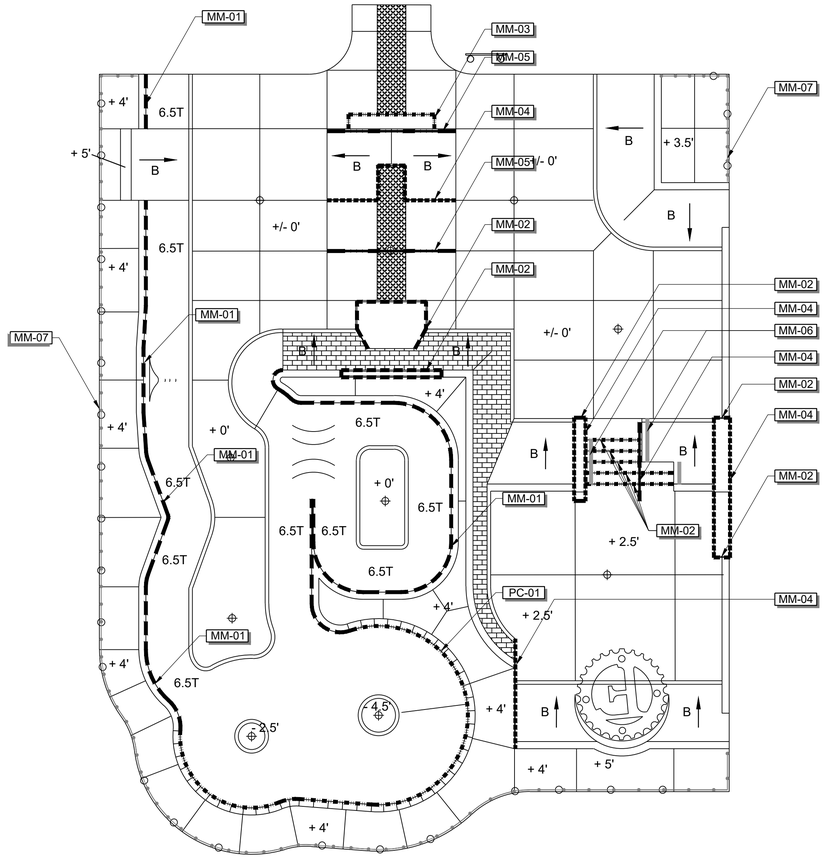


## METAL MATERIAL LEGEND

| SYMBOL | DESCRIPTION | O.D. SIZE / GAUGE | DETAIL |
|---|---|---|---|
| MM-01 | 2-3/8" O.D. ROUND STEEL PIPE COPING | | 04/SP5.06 |
| MM-02 | 1/4" THK. CUSTOM FABRICATED ANGLED PLATE EDGING | | 06/SP5.06 |
| MM-03 | 6" x 1/4" x 1-7/8" C-CHANNEL EDGING (FLUSH) | C6X8.2 - 2.00" x 6.00" x 0.1875" | 07/SP5.02 |
| MM-04 | 6" x 1/4" x 1-7/8" C-CHANNEL EDGING WITH TABS & EXPANSION ANCHORS (AT CANTILEVERED LEDGE CAPS) | C6X8.2 - 2.00" x 6.00" x 0.1875" | 05/SP5.02 |
| MM-05 | 2-3/8" O.D. ROUND PIPE RAIL | | 01-03/SP5.05 |
| MM-06 | 1/4" THK. CUSTOM CUT STEEL PLATE | | 04/SP5.02 |
| MM-07 | 3'-6" HIGH SAFETY GUARDRAIL | | |

## POOL COPING & TILE LEGEND

| SYMBOL | DESCRIPTION | DETAIL |
|---|---|---|
| PC-01 | 12" WIDE POOL POOL COPING AND 6" WIDE BORDER CONSISTING OF SIX (6) ROWS OF 1"X1" MOSAIC TILES MANUFACTURED BY DALTILE OR APPROVED EQUIVALENT | 06/SP5.05 |

## METAL MATERIAL NOTES

1. ALL METAL FABRICATION SIZES ARE NOMINAL.
2. ALL METAL FABRICATIONS SHOWN ARE TO BE HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE. REFER TO SKATE PARK METAL COLOR PLAN .
3. QUALIFICATIONS OF CONTRACTOR: PROVIDE AT LEAST ONE (1) PERSON WHO SHALL BE PRESENT AT ALL TIMES DURING EXECUTION OF THIS PORTION OF THE WORK, AND WHO SHALL BE THOROUGHLY FAMILIAR WITH THE TYPE OF MATERIALS BEING INSTALLED, THE REFERENCED STANDARDS, THE REQUIREMENTS OF THIS WORK, AND WHO SHALL DIRECT ALL WORK PERFORMED UNDER THIS SECTION.
4. WELDS NECESSARY TO CONNECT ALL COPING AND METAL FABRICATION SHOULD BE DONE BY CERTIFIED WELDER, GROUND SMOOTH, DE-BURRED AND COATED PER SPECIFICATIONS.
5. PROTECT ALL FINISH WORK ADJACENT TO METAL FABRICATION EFFORTS TO PREVENT ANY STAINING.
6. SAMPLES: REQUIRED FOR ALL COPING, RAILS, FENCING AND EDGING OF SKATE PARK. SUBMIT FINISH METAL SAMPLES FOR FINAL FINISH REQUIRED PRIOR TO DELIVERY TO SITE.
7. STEEL COPING: ROLL PIPE TO CONFORM WITH HORIZONTAL CONTROL RADII AT CENTERLINE OF PIPE.
8. CONTRACTOR SHALL REFER TO SKATE PARK CONSTRUCTION DETAILS FOR COPING SUPPORT OPTIONS. SUBMIT DETAIL ALONG WITH SHOP DRAWINGS IF USING A DIFFERENT COPING SUPPORT PRIOR TO FABRICATION.
9. ALL METAL EDGING TO HAVE END CAPS WHERE EXPOSED TO CONCRETE.

NORTH

0 5 10 20

SCALE : 1" = 10'-0"

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MICHAEL R. McINTYRE
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9/30/07
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK
METAL MATERIAL PLAN

ISSUE DATE:
10/11/2023

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CHECKED BY:
ASD

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1
2
3

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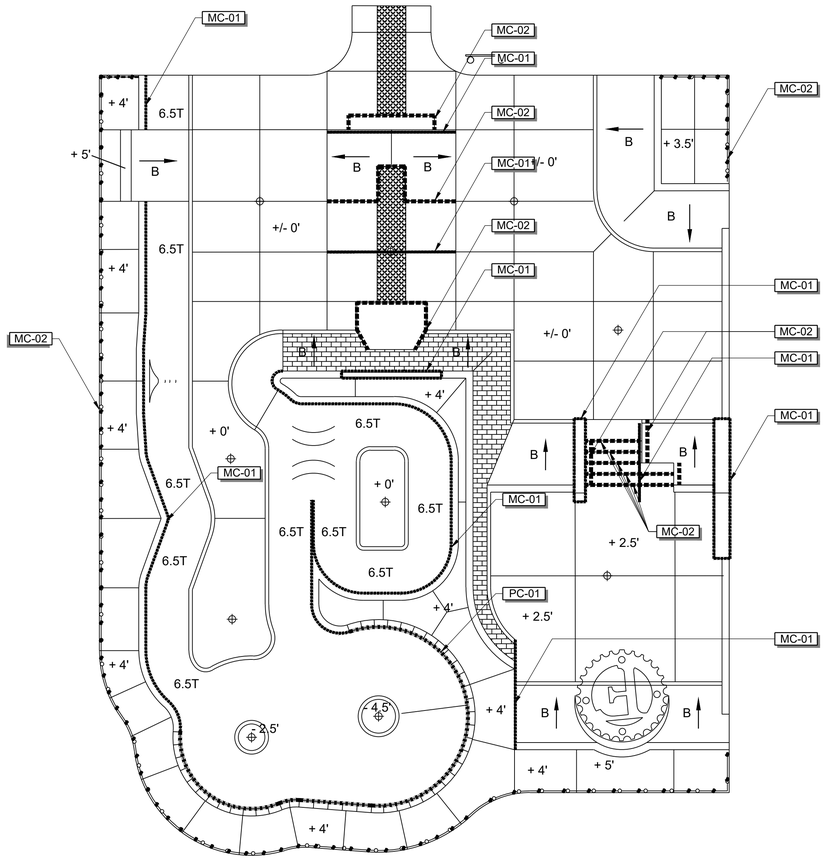


## METAL COLOR / FINISH LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| MC-01 | PAINT COLOR: DETERMINED ORANGE SW 6635 (GALVANIZED & PAINTED) MANUFACTURER: ACROLON BY SHERWIN WILLIAMS OR APPROVED EQUAL. PAINT FINISH: SEMI-GLOSS |
| MC-02 | PAINT COLOR: TRICORN BLACK SW 6285 (GALVANIZED & PAINTED) MANUFACTURER: ACROLON BY SHERWIN WILLIAMS OR APPROVED EQUAL. PAINT FINISH: SEMI-GLOSS |

## POOL COPING & TILE COLOR LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| PC-01 | 12" WIDE POOL COPING - NATURAL GRAY<br><br>6" WIDE BORDER CONSISTING OF SIX (6) ROWS OF 1"X1" MOSAIC TILES. PATTERN: RANDOM COLOR: TO BE SELECTED MANUFACTURER: DALTILE OR APPROVED EQUIVALENT. CONTRACTOR TO SUBMIT SAMPLE TO CLIENT REPRESENTATIVE AND SKATE PARK DESIGNER FOR APPROVAL. |

## METAL PAINTING NOTES

1. SURFACE PREPARATION OF GALVANIZED SURFACES SHALL BE IN ACCORDANCE WITH SSPC SP16 AND ASTM D6386:
   - A. ALL AREAS CONTAINING VISIBLE CONTAMINANTS SHALL BE SOLVENT CLEANED IN ACCORDANCE WITH SSPC SP1 SOLVENT CLEANING.
   - B. ALL AREAS CONTAINING NON-VISIBLE CONTAMINANTS SHALL BE PRESSURE WASHED CLEAN WITH CHLOR-RID PER MANUFACTURER'S SPECIFICATIONS.
   - C. GALVANIZED SURFACES SHALL BE SWEEP-BLASTED TO ACHIEVE A SLIGHT ANGULAR SURFACE PROFILE 1 MIL. MIN. BLAST OF THE GALVANIZING SHALL BE DONE IN SUCH A MANNER AS TO NOT DAMAGE OR REMOVE ANY OF THE GALVANIZING. ANY GALVANIZING THAT IS DAMAGED SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780. BLASTED SURFACES SHALL BE CLEAN, DRY, AND FREE OF CORROSION PRODUCTS AT TIME OF APPLICATION OF PAINT.
2. FINISH COAT SHALL BE ACROLON 218, MINIMUM DFT. 2.0 MILS. COLOR OF FINISH COAT SHALL HAVE COLOR AS NOTED AND HAVE A SEMI-GLOSS FINISH. APPLICATION OF PAINT SHALL FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR SHALL SUBMIT PAINTED SAMPLES TO CLIENT REPRESENTATIVE AND SKATE PARK DESIGNER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION, GALVANIZING AND PAINTING.

NORTH

0 5 10 20

SCALE : 1" = 10'-0"

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MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK
METAL COLOR PLAN

ISSUE DATE:
10/11/2023

DRAWN BY:
ASD

CHECKED BY:
ASD

REVISIONS:
1 _____
2 _____
3 _____

SHEET NUMBER:
SP1.07

**Note: Not for construction reference.**
**Alterations will be made to model during detailed design phase**
**Images are shown to display broader design concept only.**


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Original Date of Licensure
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LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK
3D RENDERINGS

ISSUE DATE:
10/11/2023

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ASD

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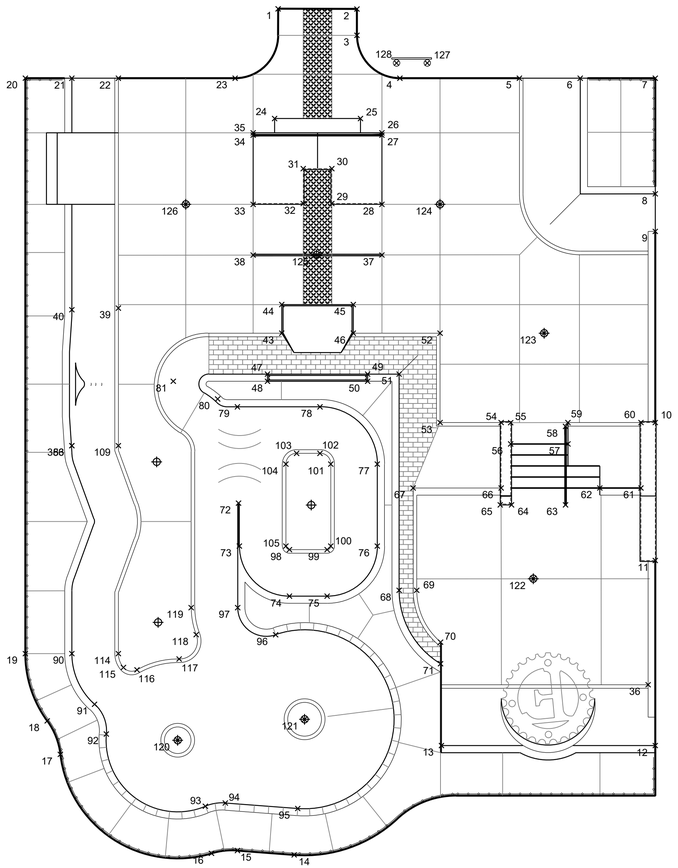


## A LAYOUT PLAN - POINTS AND POINTS TABLE

| Site Layout Point Table | | |
|---|---|---|
| Point # | Northing | Easting |
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| | | |
| 1 | 68106.85 | 44337.93 |
| 2 | 68106.81 | 44348.94 |
| 3 | 68103.14 | 44348.94 |
| 4 | 68097.14 | 44354.94 |

| Site Layout Point Table | | |
|---|---|---|
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| 5 | 68097.14 | 44371.64 |
| 6 | 68097.14 | 44380.14 |
| 7 | 68097.14 | 44390.62 |
| 8 | 68080.99 | 44390.62 |
| 9 | 68075.74 | 44390.62 |
| 10 | 68049.02 | 44390.62 |
| 11 | 68029.73 | 44390.62 |
| 12 | 68003.87 | 44390.62 |
| 13 | 68003.87 | 44360.74 |
| 14 | 67988.59 | 44340.17 |
| 15 | 67989.19 | 44332.25 |
| 16 | 67988.80 | 44328.62 |
| 17 | 68002.63 | 44307.50 |
| 18 | 68007.32 | 44305.66 |
| 19 | 68016.72 | 44302.61 |
| 20 | 68097.15 | 44302.61 |
| 21 | 68097.14 | 44309.11 |
| 22 | 68097.14 | 44315.61 |
| 23 | 68097.14 | 44331.92 |
| 24 | 68091.51 | 44337.43 |

| Site Layout Point Table | | |
|---|---|---|
| Point # | Northing | Easting |
| 25 | 68091.51 | 44349.43 |
| 26 | 68089.51 | 44352.43 |
| 27 | 68089.18 | 44352.43 |
| 28 | 68079.51 | 44352.43 |
| 29 | 68079.64 | 44345.43 |
| 30 | 68084.51 | 44345.43 |
| 31 | 68084.51 | 44341.43 |
| 32 | 68079.64 | 44341.43 |
| 33 | 68079.51 | 44334.43 |
| 34 | 68089.18 | 44334.43 |
| 35 | 68089.51 | 44334.43 |
| 36 | 68012.37 | 44389.62 |
| 37 | 68072.44 | 44352.43 |
| 38 | 68072.43 | 44334.43 |
| 39 | 68065.01 | 44315.61 |
| 40 | 68064.79 | 44309.11 |
| 43 | 68061.51 | 44338.43 |
| 44 | 68065.51 | 44338.43 |
| 45 | 68065.51 | 44348.43 |
| 46 | 68061.51 | 44348.43 |

| Site Layout Point Table | | |
|---|---|---|
| Point # | Northing | Easting |
| 47 | 68055.79 | 44336.43 |
| 48 | 68054.79 | 44336.43 |
| 49 | 68055.79 | 44350.43 |
| 50 | 68054.79 | 44350.43 |
| 51 | 68055.79 | 44354.83 |
| 52 | 68061.51 | 44360.55 |
| 53 | 68049.02 | 44360.55 |
| 54 | 68049.02 | 44369.09 |
| 55 | 68049.01 | 44370.42 |
| 56 | 68046.03 | 44370.42 |
| 57 | 68046.03 | 44378.42 |
| 58 | 68048.48 | 44378.09 |
| 59 | 68049.02 | 44378.42 |
| 60 | 68049.02 | 44388.62 |
| 61 | 68039.87 | 44388.62 |
| 62 | 68039.87 | 44382.88 |
| 63 | 68037.51 | 44378.09 |
| 64 | 68037.51 | 44370.54 |
| 65 | 68037.51 | 44368.96 |
| 66 | 68039.87 | 44369.09 |

| Site Layout Point Table | | |
|---|---|---|
| Point # | Northing | Easting |
| 67 | 68039.87 | 44356.79 |
| 68 | 68025.57 | 44354.83 |
| 69 | 68025.57 | 44357.29 |
| 70 | 68018.32 | 44360.62 |
| 71 | 68015.30 | 44360.62 |
| 72 | 68037.75 | 44332.39 |
| 73 | 68031.75 | 44332.51 |
| 74 | 68024.75 | 44339.51 |
| 75 | 68024.75 | 44344.78 |
| 76 | 68031.75 | 44351.78 |
| 77 | 68043.21 | 44351.78 |
| 78 | 68051.21 | 44343.78 |
| 79 | 68051.21 | 44332.23 |
| 80 | 68052.31 | 44329.48 |
| 81 | 68054.79 | 44323.28 |
| 83 | 68045.79 | 44309.11 |
| 90 | 68016.72 | 44309.11 |
| 91 | 68009.64 | 44312.27 |
| 92 | 68005.48 | 44313.92 |
| 93 | 67995.39 | 44327.76 |

| Site Layout Point Table | | |
|---|---|---|
| Point # | Northing | Easting |
| 94 | 67995.84 | 44330.54 |
| 95 | 67995.07 | 44340.67 |
| 96 | 68019.36 | 44337.57 |
| 97 | 68023.14 | 44332.28 |
| 98 | 68031.25 | 44339.51 |
| 99 | 68031.25 | 44344.78 |
| 100 | 68031.75 | 44345.28 |
| 101 | 68043.21 | 44345.28 |
| 102 | 68044.71 | 44343.78 |
| 103 | 68044.71 | 44340.51 |
| 104 | 68043.21 | 44339.01 |
| 105 | 68031.75 | 44339.01 |
| 109 | 68045.79 | 44315.61 |
| 114 | 68016.72 | 44315.61 |
| 115 | 68014.79 | 44316.31 |
| 116 | 68014.46 | 44318.21 |
| 117 | 68015.97 | 44324.10 |
| 118 | 68019.37 | 44326.48 |
| 119 | 68023.14 | 44325.78 |
| 120 | 68004.61 | 44323.88 |

| Site Layout Point Table | | |
|---|---|---|
| Point # | Northing | Easting |
| 121 | 68007.53 | 44341.62 |
| 122 | 68027.18 | 44373.58 |
| 123 | 68061.51 | 44375.09 |
| 124 | 68079.52 | 44360.55 |
| 125 | 68072.44 | 44343.29 |
| 126 | 68079.51 | 44325.02 |
| 127 | 68099.27 | 44358.77 |
| 128 | 68099.27 | 44354.46 |

## LAYOUT NOTES

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2. ALL COORDINATES SHOWN AT THE BOTTOM OF ALL BANKS/ TRANSITIONS NEED TO BE CHECKED AGAINST THE CROSS SECTIONS FOR ACCURACY.
3. BECAUSE OF THE SCALE OF THIS DRAWING AND PROXIMITY OF FEATURES TO EACH OTHER, THE LOCATION OF SOME OR THE POINTS MAY BE OBSCURED. REFER TO THE LAYOUT DATA FOR THE ACTUAL LOCATIONS FOR ALL POINTS.
4. CONTRACTOR TO BE RESPONSIBLE FOR SURVEY WORK.

NORTH

0 5 10 20

SCALE : 1" = 10'-0"


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MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK
LAYOUT PLAN - POINTS AND POINTS TABLE

ISSUE DATE: 10/11/2023

DRAWN BY: ASD

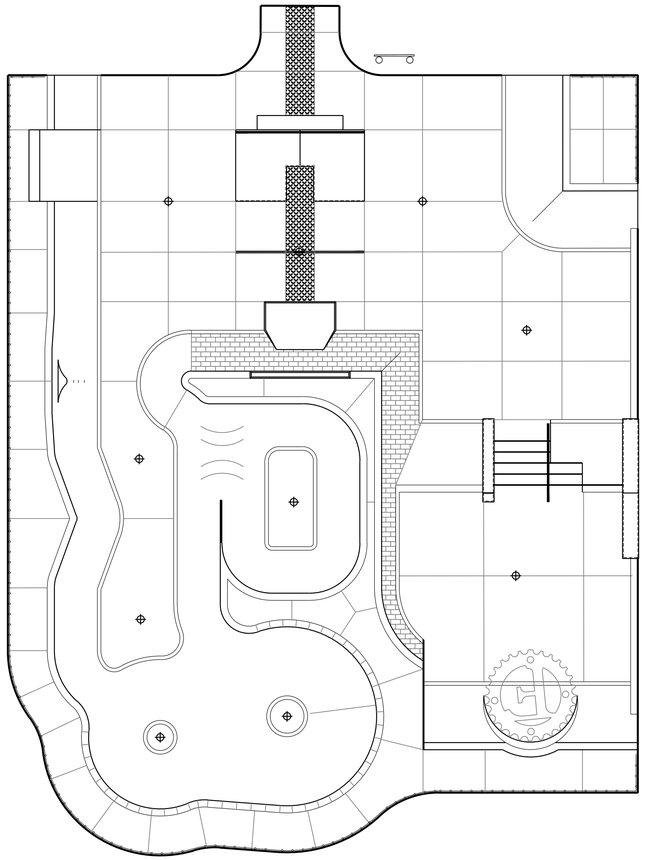
CHECKED BY: ASD

REVISIONS:
1 _____
2 _____
3 _____

SHEET NUMBER: SP2.01

| Line Table | | |
|---|---|---|
| Line # | Length | Direction |

| Curve Table | | |
|---|---|---|
| Curve # | Length | Radius |



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B LAYOUT PLAN - LINES AND CURVES AND LINE/CURVE TABLES

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ASD

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ASD

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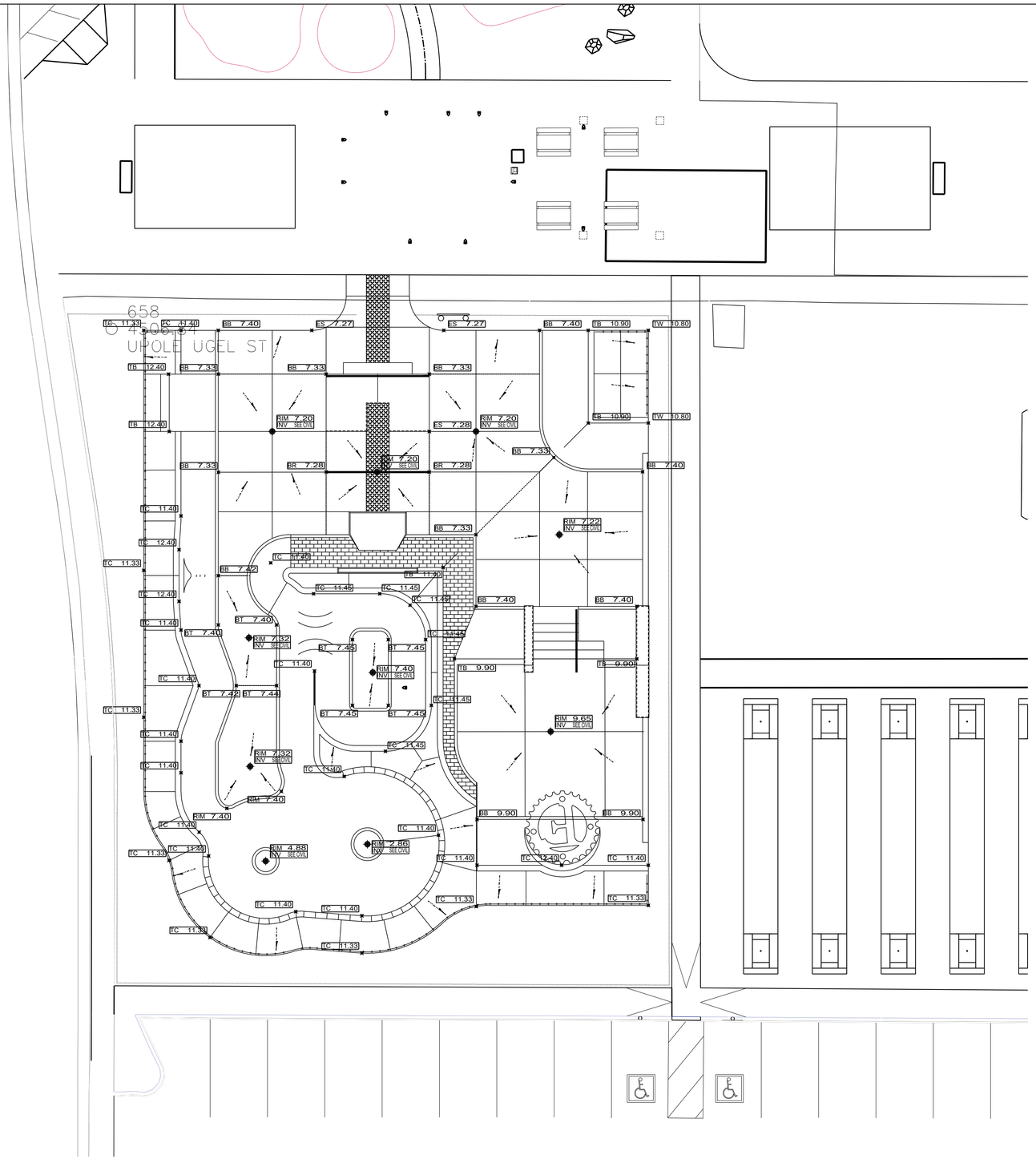


## SKATE PARK
## GRADING & DRAINAGE LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| | DIRECTION OF SURFACE FLOW |
| | G.B. BREAK IN GRADE |
| | F.L. FLOWLINE IN SWALE |
| TOW | TOP OF WALL ELEVATION |
| | DRAIN INLET, SEE 08/SP5.03 |
| T | RADIUS OF WALL. REFER TO SECTION SHEETS FOR PROFILE VIEW |
| B | BANK-EMBANKMENT WALL WITH SLOPE AND RADII AT BASE. REFER TO SECTION SHEETS FOR PROFILE VIEW. |

## SKATE PARK
## GRADING & DRAINAGE NOTES

1. FINAL HEIGHT AND SHAPE OF EXCAVATION TO BE VERIFIED BY SKATE PARK DESIGNER IN THE FIELD.
2. ALL SPOT ELEVATIONS ARE FOR TOP OF FINISH WORK UNLESS OTHERWISE NOTED.
3. MINIMUM SLOPE FOR ALL CONCRETE FINISH WORK SHALL BE 1%. WATER MUST DRAIN TOWARDS DIRECTION OF FLOW ARROWS AND FOLLOW OVERALL DESIGN INTENT.
4. MAXIMUM SIDEWALK CROSS SLOPE IS 2.0%.
5. MAXIMUM SIDEWALK LONGITUDINAL SLOPE IS 5.0%.
6. All AREAS DISTURBED BY GRADING OPERATIONS TO BE FINE GRADED.
7. VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO COMMENCING WORK.
8. REFER TO SECTIONS AND PROFILES FOR HEIGHT, RADII AND PROFILES.
9. ALL FINE GRADING OF EARTHWORK SHALL BE INSPECTED WITH TEMPLATES CUT TO THE SPECIFIED RADII/ ANGLE. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL TEMPLATES/ SCREEDS TO BE USED FOR EARTHWORK TOLERANCES FOR APPROVAL BY SKATE PARK DESIGNER.
10. CONTRACTOR TO PROTECT ALL EXCAVATIONS FROM SOIL EROSION AND WATER SATURATION AT ALL TIMES USING APPROPRIATE CONSTRUCTION METHODS. AND LOSS OF SOIL PROFILE DURING CONSTRUCTION SHALL BE REPLACED WITH APPROPRIATE SOIL COMPOSITION AND COMPACTION METHODS TO MATCH LOSS SOIL.
11. MAINTAIN ALL EXISTING TREES UNLESS NOTED OTHERWISE ON CIVIL PLANS.
12. CONTRACTOR TO VERIFY FEATURE ELEVATIONS WITH SKATE PARK SECTIONS. IF A DISCREPANCY OCCURS, CONTRACTOR SHALL CONTACT SKATE PARK DESIGNER IMMEDIATELY.
13. CONTRACTOR TO REFER TO CIVIL PLANS FOR FINISH GRADE ELEVATIONS BEYOND SKATE PARK FOOTPRINT.

## SURVEY NOTES

1. LOCATE ALL SURVEY MARKS INCLUDING BENCH MARKS AND PROPERTY LINES IN ORDER THAT THE EXACT LINES OF CONSTRUCTION LIMITS AND GRADES MAY BE DETERMINED. BRING ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY BEFORE PROCEEDING WITH WORK.
2. VERIFY ENTIRE LAYOUT PRIOR TO START OF CONSTRUCTION WITH PROJECT OWNER'S REPRESENTATIVES AND SKATE PARK DESIGNER.
3. LOCATE AND PROTECT CONTROL POINTS PRIOR TO STARTING SITE WORK AND PROTECT ALL PERMANENT REFERENCE POINTS DURING ENTIRE CONSTRUCTION. REPLACE PROJECT CONTROL POINTS WHICH MAY BE LOST OR DESTROYED DURING CONSTRUCTION.
4. CONTRACTOR SHALL VERIFY FINISH GRADE ELEVATIONS AS SHOWN ON CIVIL ENGINEER'S PLANS AND BRING ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY BEFORE PROCEEDING WITH WORK.

## SPOT ELEVATION LEGEND

| | |
|---|---|
| BW | BOTTOM OF WALL |
| TW | TOP OF WALL |
| BB | BOTTOM OF BANK |
| TB | TOP OF BANK |
| ES | EDGE OF SLAB |
| TS | TOP OF SLAB |
| TL | TOP OF LEDGE |
| BL | BOTTOM OF LEDGE |
| TC | TOP OF CURB |
| BC | BOTTOM OF CURB |
| TT | TOP OF TRANSITION |
| BT | BOTTOM OF TRANSITION |
| RIM | RIM OF DRAIN |
| INV | INVERT |

NORTH

0 5 10 20

SCALE : 1" = 10'-0"

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GRADING AND DRAINAGE PLAN

ISSUE DATE:
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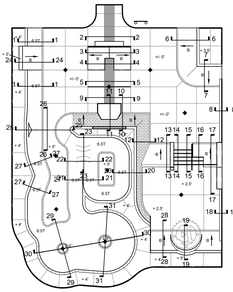


## - KEY MAP

### CONCRETE GENERAL / SPECIALTY WORK LEGEND

- CONCRETE WORK TO BE PERFORMED BY GENERAL CONTRACTOR OR SKATE PARK SPECIALTY CONTRACTOR
- CONCRETE WORK TO BE PERFORMED BY SKATE PARK SPECIALTY CONTRACTOR

### MATERIAL LEGEND

- CONCRETE WALL / LEDGE / BANK/ QUARTER PIPE BEYOND
- METAL EDGING BEYOND
- RECOMMENDED SUB-BASE MATERIAL PER CONSTRUCTION DETAILS

### GENERAL NOTES

1. ALL SECTION DIMENSIONS ARE TOP OF CONCRETE FINISH GRADE UNLESS OTHERWISE NOTED.
2. DO NOT INCLUDE METAL FABRICATION OFFSET TO OVERALL DIMENSIONS SHOWN IN SECTIONS AND PROFILES.
3. REFER TO SKATE PARK LAYOUT PLAN SHEETS FOR ACTUAL HORIZONTAL LOCATIONS.
4. FINAL GRADE EARTHWORK AND FORM WORK TO REVIEWED AND APPROVED BY SKATE PARK DESIGN TEAM. SKATE PARK DESIGN TEAM RESERVES THE RIGHT TO MAKE FIELD ADJUSTMENTS AS NECESSARY TO FULFILL THE DESIGN INTENT.
5. ALL DIMENSIONS AT BOTTOM OF BOWLS, EMBANKMENTS, TRANSITIONS ARE LOCATED AT THE CONSTRUCTION JOINT.
6. DUE TO THE UNIQUE AND SCULPTURAL ASPECTS OF THE SKATE PARK THE LOCATION OF THE DIMENSIONS IN THE SECTIONS NEED TO BE CROSS REFERENCED BY THE SKATE PARK LAYOUT PLAN.
7. CONTRACTOR SHALL HAVE EXTENSIVE KNOWLEDGE AND EXPERIENCE OF SKATE PARK CONSTRUCTION AND/ OR FREEFORM PRECISION CONCRETE FORMING, APPLICATION AND FINISHING TO PROPERLY INTERPRET SECTIONS/ PROFILES.
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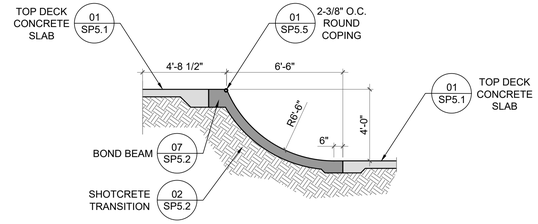
12. IF THERE ARE ANY MATERIAL, COLOR, OR DIMENSIONS DISCREPANCIES BETWEEN THE SECTIONS AND PLANS, CONTRACTOR SHALL NOTIFY SKATE PARK DESIGNER.

## - NOTES




## 1 SECTION

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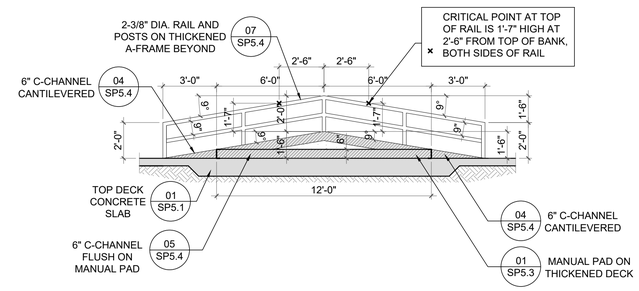


## 2 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"




## 3 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"




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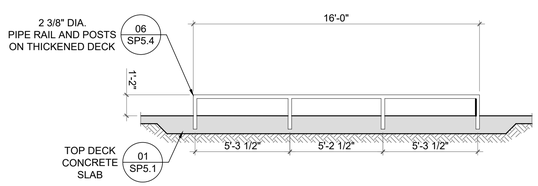
0" 1' 2' 4' | SCALE 1/4" = 1'-0"

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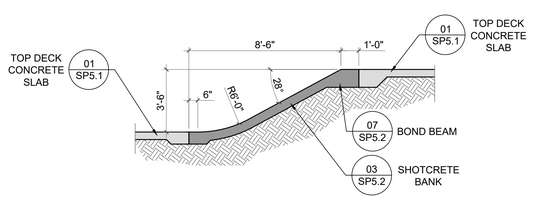


## 6 SECTION

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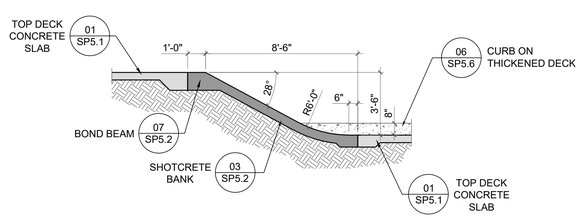


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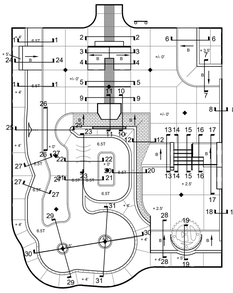


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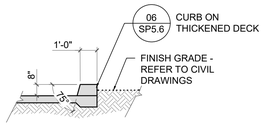


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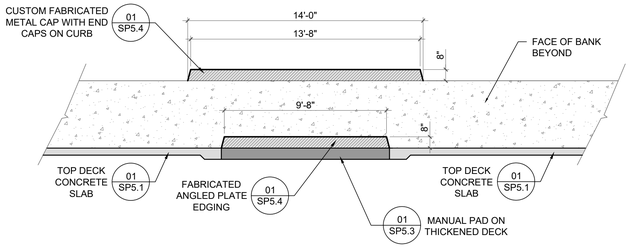


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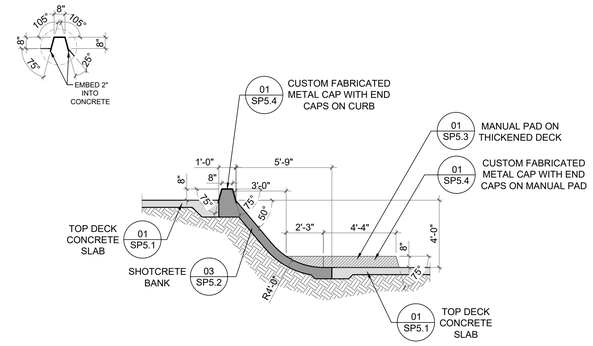


## 10 SECTION

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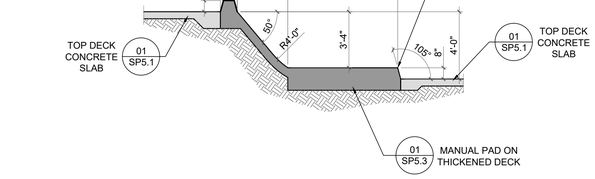


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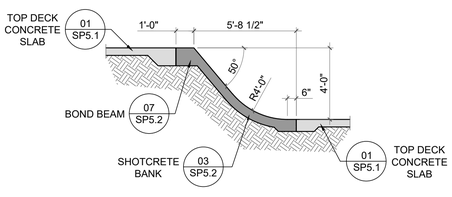


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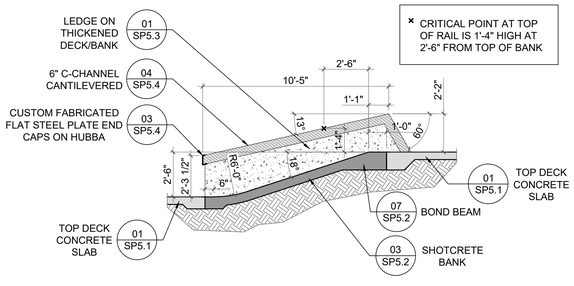


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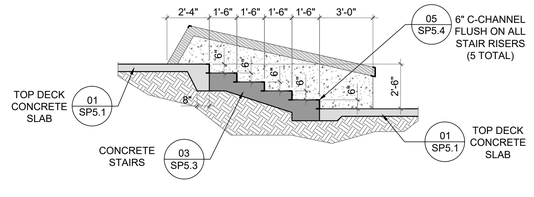


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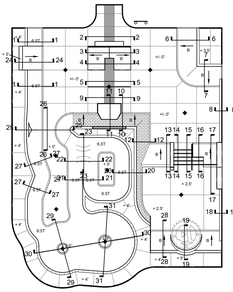
SHEET NUMBER:
SP4.02




## - KEY MAP

### CONCRETE GENERAL / SPECIALTY WORK LEGEND

- CONCRETE WORK TO BE PERFORMED BY GENERAL CONTRACTOR OR SKATE PARK SPECIALTY CONTRACTOR
- CONCRETE WORK TO BE PERFORMED BY SKATE PARK SPECIALTY CONTRACTOR

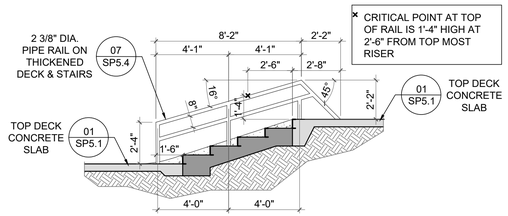
### MATERIAL LEGEND

- CONCRETE WALL / LEDGE / BANK/ QUARTER PIPE BEYOND
- METAL EDGING BEYOND
- RECOMMENDED SUB-BASE MATERIAL PER CONSTRUCTION DETAILS

### GENERAL NOTES

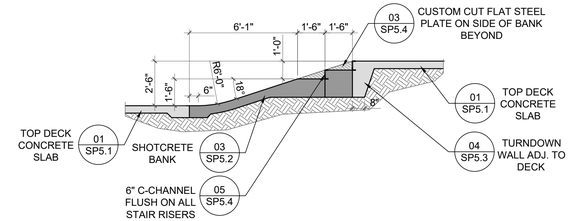
1. ALL SECTION DIMENSIONS ARE TOP OF CONCRETE FINISH GRADE UNLESS OTHERWISE NOTED.
2. DO NOT INCLUDE METAL FABRICATION OFFSET TO OVERALL DIMENSIONS SHOWN IN SECTIONS AND PROFILES.
3. REFER TO SKATE PARK LAYOUT PLAN SHEETS FOR ACTUAL HORIZONTAL LOCATIONS.
4. FINAL GRADE EARTHWORK AND FORM WORK TO REVIEWED AND APPROVED BY SKATE PARK DESIGN TEAM. SKATE PARK DESIGN TEAM RESERVES THE RIGHT TO MAKE FIELD ADJUSTMENTS AS NECESSARY TO FULFILL THE DESIGN INTENT.
5. ALL DIMENSIONS AT BOTTOM OF BOWLS, EMBANKMENTS, TRANSITIONS ARE LOCATED AT THE CONSTRUCTION JOINT.
6. DUE TO THE UNIQUE AND SCULPTURAL ASPECTS OF THE SKATE PARK THE LOCATION OF THE DIMENSIONS IN THE SECTIONS NEED TO BE CROSS REFERENCED BY THE SKATE PARK LAYOUT PLAN.
7. CONTRACTOR SHALL HAVE EXTENSIVE KNOWLEDGE AND EXPERIENCE OF SKATE PARK CONSTRUCTION AND/ OR FREEFORM PRECISION CONCRETE FORMING, APPLICATION AND FINISHING TO PROPERLY INTERPRET SECTIONS/ PROFILES.
8. ALL CONCRETE FINISH WORK TO BE PERFORMED BY QUALIFIED CONTRACTOR WHO IS ABLE TO MEET THE TOLERANCES MENTIONED IN THE PROJECT'S TECHNICAL SPECIFICATIONS.
9. ALL BANKS LESS THAN 3' HIGH MAY BE CAST IN PLACE, IN LIEU OF SHOTCRETE, UPON SKATE PARK DESIGNER'S APPROVAL.
10. CONTRACTOR TO APPLY ELASTOMERIC WATERPROOFING MEMBRANE AT ALL PLANTER WALLS.
11. REFER TO CONSTRUCTION DETAILS FOR RECOMMENDED SUB-BASE MATERIAL.
12. IF THERE ARE ANY MATERIAL, COLOR, OR DIMENSIONS DISCREPANCIES BETWEEN THE SECTIONS AND PLANS, CONTRACTOR SHALL NOTIFY SKATE PARK DESIGNER.

## - NOTES




## 15 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



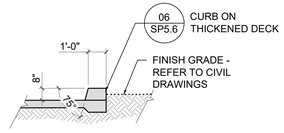

## 16 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



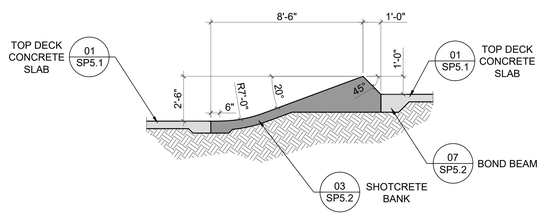

## 17 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



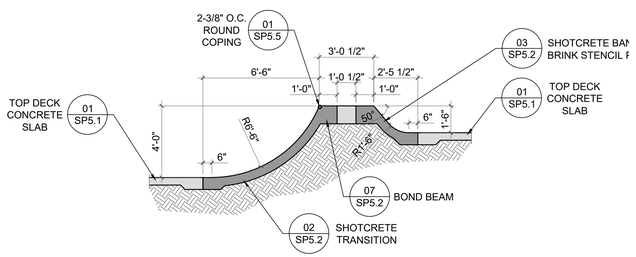

## 18 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



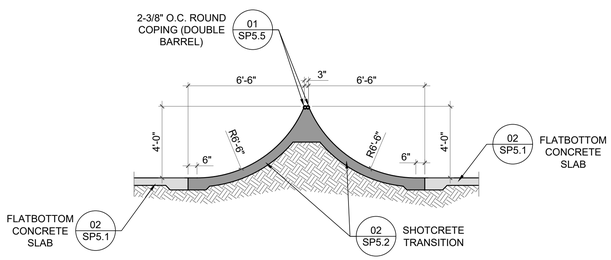

## 19 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"




## 20 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"




## 21 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"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MICHAEL R. McINTYRE
688
9/30/07
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK SECTIONS & PROFILES

ISSUE DATE: 10/11/2023

DRAWN BY: ASD

CHECKED BY: ASD

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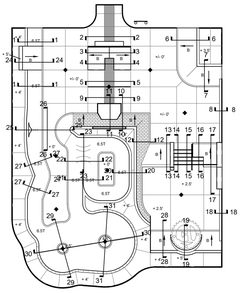
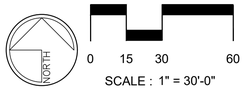
1 _____
2 _____
3 _____

SHEET NUMBER: SP4.03






## - KEY MAP

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- CONCRETE WORK TO BE PERFORMED BY GENERAL CONTRACTOR OR SKATE PARK SPECIALTY CONTRACTOR
- CONCRETE WORK TO BE PERFORMED BY SKATE PARK SPECIALTY CONTRACTOR

### MATERIAL LEGEND

- CONCRETE WALL / LEDGE / BANK/ QUARTER PIPE BEYOND
- METAL EDGING BEYOND
- RECOMMENDED SUB-BASE MATERIAL PER CONSTRUCTION DETAILS

### GENERAL NOTES

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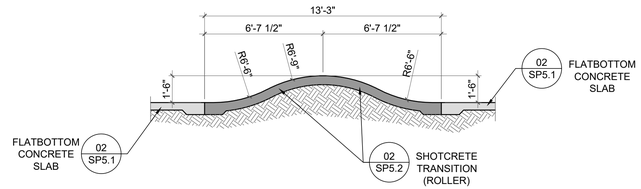
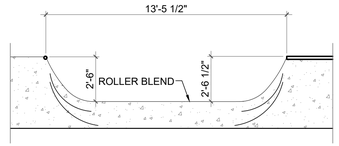
## - NOTES



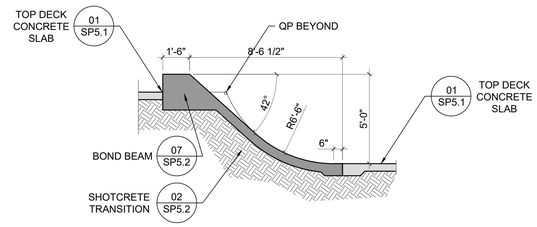

## 22 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



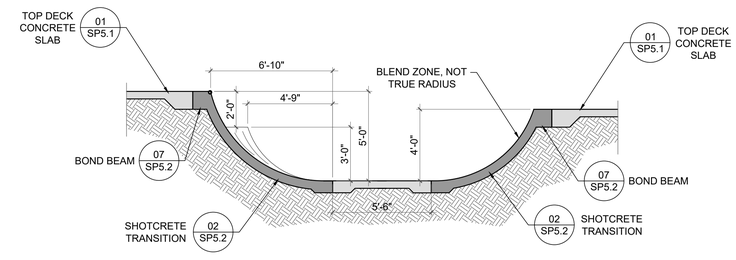

## 23 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



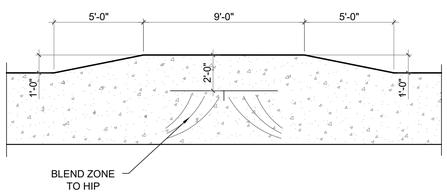

## 24 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



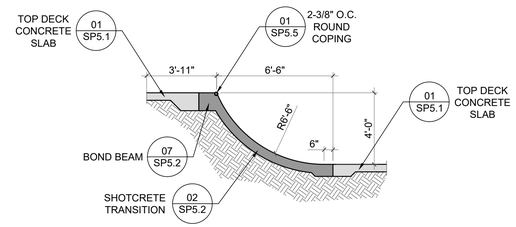

## 25 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"



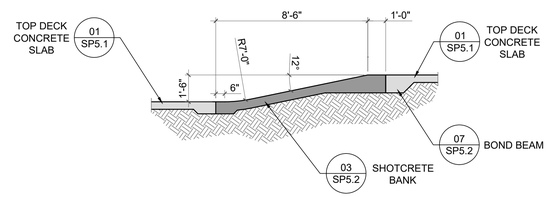

## 26 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"




## 27 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"




## 28 SECTION

0" 1' 2' 4' | SCALE 1/4" = 1'-0"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Phone: 1(512) 387-5827
www.ActionSportsDesign.com


MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK SECTIONS & PROFILES

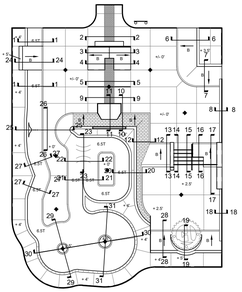
ISSUE DATE: 10/11/2023

DRAWN BY: ASD

CHECKED BY: ASD

REVISIONS:
1
2
3

SHEET NUMBER: SP4.04




## - KEY MAP

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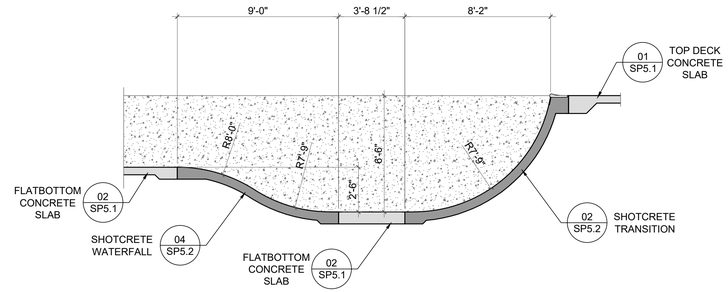
## - NOTES

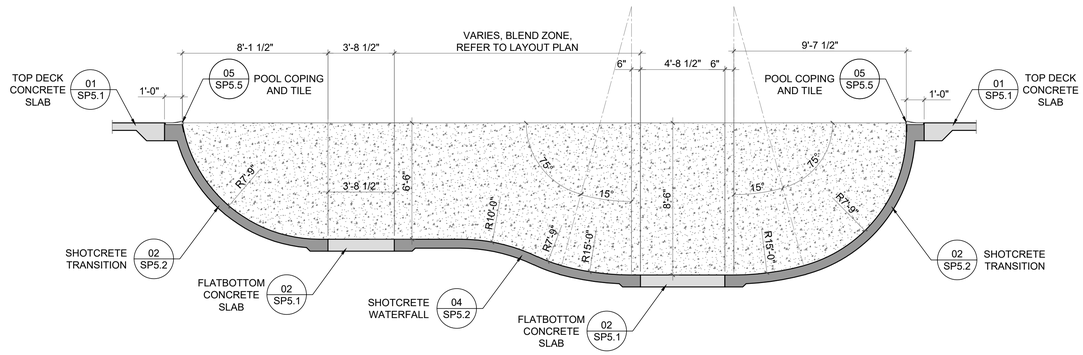
## 29 SECTION




0" 1' 2' 4'

SCALE 1/4" = 1'-0"

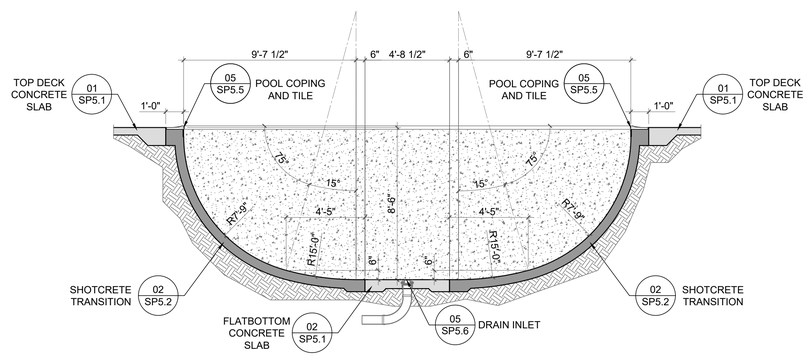
## 30 SECTION




0" 1' 2' 4'

SCALE 1/4" = 1'-0"

## 31 SECTION




0" 1' 2' 4'

SCALE 1/4" = 1'-0"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MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK SECTIONS & PROFILES

ISSUE DATE: 10/11/2023

DRAWN BY: ASD

CHECKED BY: ASD

REVISIONS:
1 _____
2 _____
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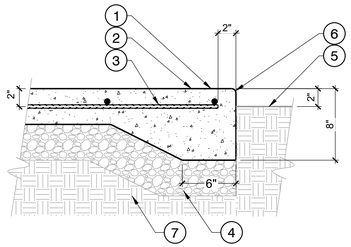
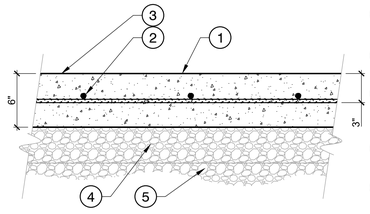
SHEET NUMBER: SP4.05




1. STEEL TROWEL SMOOTH FINISH UNLESS NOTED OTHERWISE
2. 5" REINFORCED CONCRETE SLAB
3. #3 REBAR AT 16" O.C. BOTH WAYS, TYP.
4. SELECT/ STRUCTURAL FILL
5. FINISH GRADE
6. 1/2" TOOLED EDGE
7. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

## 01 5" THK. TOP DECK SLAB

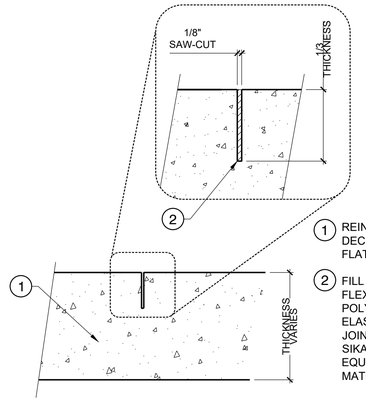
1 1/2" = 1'-0"




1. 6" REINFORCED CONCRETE SLAB
2. #3 REBAR AT 16" O.C. BOTH WAYS, TYP.
3. STEEL TROWEL SMOOTH FINISH UNLESS NOTED OTHERWISE
4. SELECT / STRUCTURAL FILL
5. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

## 02 6" THK. FLAT-BOTTOM CONCRETE SLAB

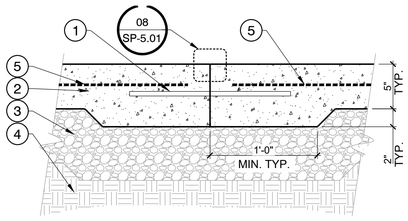
1 1/2" = 1'-0"



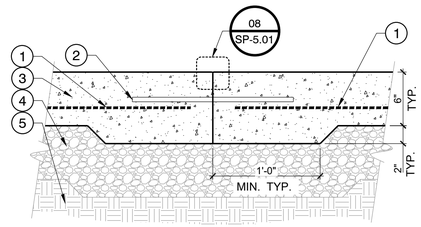

1. REINFORCED TOP DECK OR FLATBOTTOM
2. FILL JOINT WITH FLEXIBLE POLYURETHANE ELASTOMERIC JOINT SEALANT: SIKAFLEX-1A OR EQUAL- COLOR TO MATCH CONCRETE

## 03 TYP. SAW-CUT JOINT

3" = 1'-0"




1. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
2. REINFORCED TOP DECK OR FLATBOTTOM
3. SELECT / STRUCTURAL FILL
4. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"
5. TERMINATE SLAB REINF. AT JOINT



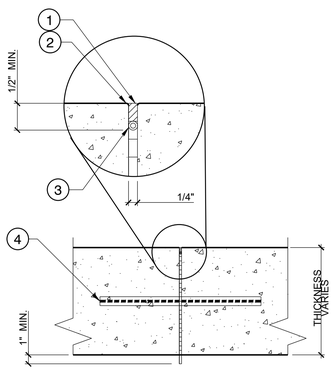

1. TERMINATE SLAB REINF. AT JOINT
2. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
3. REINFORCED TOP DECK OR FLATBOTTOM
4. SELECT / STRUCTURAL FILL
5. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

## 04 TYP. CONSTRUCTION JOINT AT 5" SLAB

1 1/2" = 1'-0"

## 05 TYP. CONSTRUCTION JOINT AT 6" SLAB

1 1/2" = 1'-0"

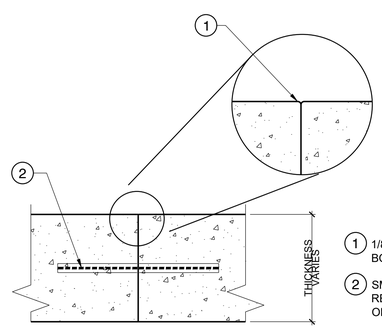



1. POLYURETHANE ELASTOMERIC OR EQUAL SEALANT. TOOL FLAT & SMOOTH SIKAFLEX-1C SL OR EQUAL
2. 1/8" TOOLED RADIUS BOTH SIDES, TYP.
3. BOND BREAKER MEMBRANE
4. SMOOTH DOWEL #4 X 18" REBAR @ 2' O.C., GREASE OR WRAP ONE END

NOTES:
1. MINIMUM CAULKING THICKNESS WITH BOND BREAKER IN PLACE IS 1/4"
2. 1/4" EXPANSION JOINT AT FLATWORK

## 06 TYP. EXPANSION JOINT AT FLATWORK

NOT TO SCALE




1. 1/8" TOOLED RADIUS BOTH SIDES, TYP.
2. SMOOTH DOWEL #4 X 18" REBAR @ 2' O.C., GREASE OR WRAP ONE END

## 07 TYP. CONSTRUCTION JOINT

NOT TO SCALE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MICHAEL R. McINTYRE
688
9/30/07
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK DETAILS

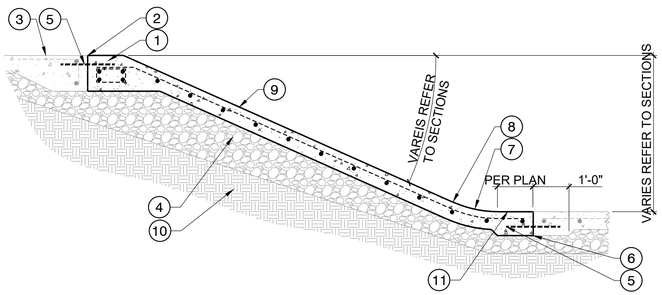
ISSUE DATE:
10/11/2023

DRAWN BY:
ASD

CHECKED BY:
ASD

REVISIONS:
1 _____
2 _____
3 _____

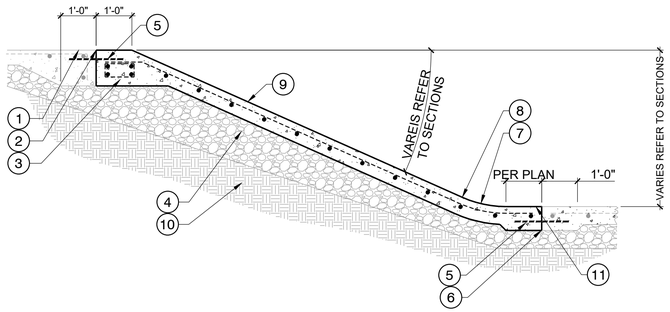
SHEET NUMBER:
SP5.01



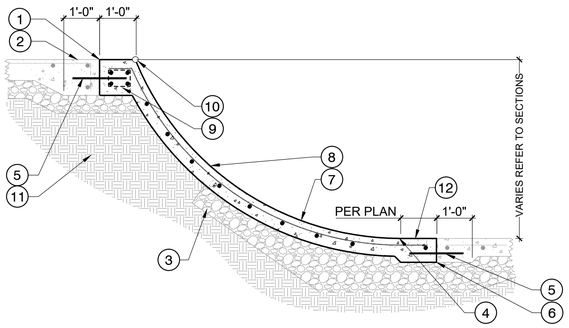

1. BOND BEAM, SEE 07/SP5.02
2. CONSTRUCTION JOINT AT BOND BEAM
3. REINFORCED TOP DECK
4. 6" DENSE GRADED CRUSHED STONE
5. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
6. CONSTRUCTION JOINT AT REINFORCED DECK
7. RADIUS VARIES, REFER TO SECTIONS
8. POINT OF TANGENCY
9. 6" CAST IN PLACE BANK WITH REBAR #3 @ 12" O.C. BOTH WAYS
10. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"
11. SLOPE/GRADE BETWEEN POINT OF TANGENCY AND CONSTRUCTION JOINT TO BE CONSISTENT WITH SLOPE/GRADE OF TOP DECK / FLATBOTTOM

## 01 TYP. CAST-IN-PLACE BANK

1/2" = 1'-0"



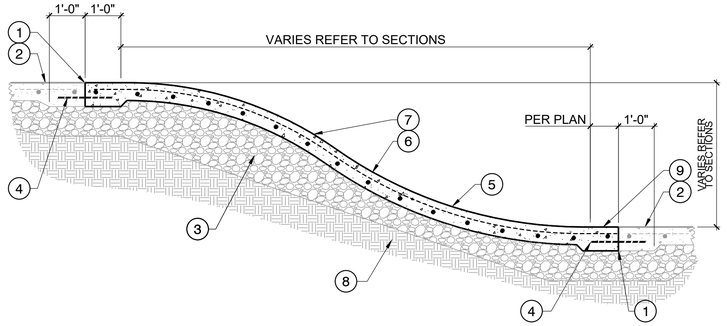

1. BOND BEAM, SEE 07/SP5.02
2. CONSTRUCTION JOINT AT BOND BEAM
3. REINFORCED TOP DECK
4. SELECT / STRUCTURAL FILL
5. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
6. CONSTRUCTION JOINT AT REINFORCED DECK
7. RADIUS VARIES, REFER TO SECTIONS
8. POINT OF TANGENCY
9. 6" SHOTCRETE BANK WITH REBAR #3 @ 12" O.C. BOTH WAYS
10. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"
11. SLOPE/GRADE BETWEEN POINT OF TANGENCY AND CONSTRUCTION JOINT TO BE CONSISTENT WITH SLOPE/GRADE OF TOP DECK / FLATBOTTOM




1. CONSTRUCTION JOINT AT BOND BEAM
2. REINFORCED TOP DECK
3. 6" DENSE GRADED CRUSHED STONE
4. POINT OF TANGENCY
5. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
6. CONSTRUCTION JOINT AT REINFORCED DECK
7. RADIUS VARIES, REFER TO SECTIONS
8. 6" SHOTCRETE TRANSITION WITH REBAR #3 @ 12" O.C. BOTH WAYS, TYP.
9. BOND BEAM, SEE 07/SP5.02
10. COPING - REFER TO MATERIAL PLAN FOR TYPE & LOCATION
11. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"
12. SLOPE/GRADE BETWEEN POINT OF TANGENCY AND CONSTRUCTION JOINT TO BE CONSISTENT WITH SLOPE/GRADE OF TOP DECK / FLATBOTTOM

## 02 TYP. SHOTCRETE TRANSITION

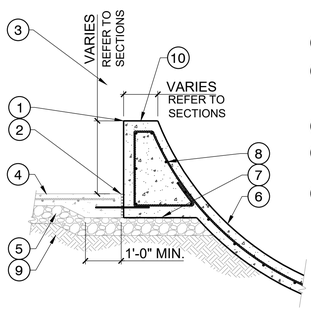
1/2" = 1'-0"




1. CONSTRUCTION JOINT AT FLATBOTTOM
2. REINFORCED FLATBOTTOM
3. 6" DENSE GRADED CRUSHED STONE
4. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
5. RADIUS VARIES, REFER TO SECTIONS
6. 6" SHOTCRETE TRANSITION WITH REBAR #3 @ 12" O.C. BOTH WAYS, TYP
7. RADIUS VARIES, REFER TO SECTIONS
8. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"
9. SLOPE/GRADE BETWEEN POINT OF TANGENCY AND CONSTRUCTION JOINT TO BE CONSISTENT WITH SLOPE/GRADE OF TOP DECK / FLATBOTTOM

## 03 TYP. SHOTCRETE BANK

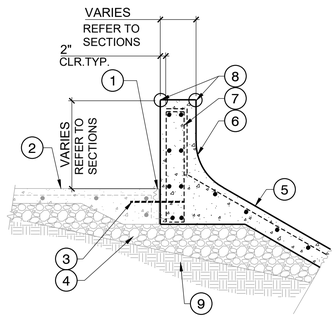
1/2" = 1'-0"



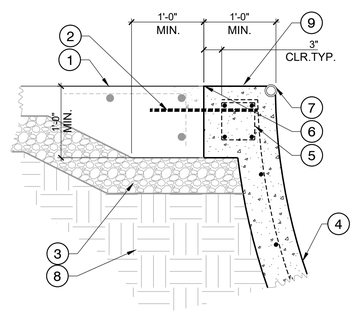

1. EDGE TREATMENT - REFER TO MATERIALS PLAN FOR TYPE & LOCATION
2. EXPANSION JOINT, (TYP.)
3. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
4. REINFORCED DECK
5. SELECT/ STRUCTURAL FILL
6. SHOTCRETE WALL WITH #3 REBAR AT 12" O.C. BOTH WAYS TYP.
7. BASE OF BOND BEAM TO FOLLOW DECK PROFILE
8. EXTENSION REINFORCING: #3 AT 12" O.C., VERTICAL (CONT), TYP. #4 AT 12" O.C., HORIZONTAL, TYP.
9. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"
10. SLOPE/GRADE OF BOND BEAM SURFACE TO BE CONSISTENT WITH SLOPE/GRADE OF ADJACENT TOP DECK

## 04 TYP. SHOTCRETE WATERFALL

1/2" = 1'-0"




1. EXPANSION JOINT WITH POLYURETHANE ELASTOMERIC SEALANT, (TYP)
2. REINFORCED TOP DECK
3. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
4. SELECT/ STRUCTURAL FILL
5. 6" SHOTCRETE WALL WITH REBAR #3 @ 12" O.C.
6. RADIUS VARIES REFER TO SECTIONS
7. EXTENSION REINFORCING: #3 @ 12" O.C. VERTICAL (CONT.) TYP. #4 @ 12" O.C. HORIZONTAL TYP.
8. EDGE TREATMENT - REFER TO MATERIALS PLAN FOR TYPE & LOCATION
9. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"




1. REINFORCED TOP DECK
2. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
3. SELECT/ STRUCTURAL FILL
4. 6" SHOTCRETE TRANSITION WITH REBAR #3 @ 12" BOTH WAYS
5. 6" DENSE GRADED CRUSHED STONE
6. 6" SHOTCRETE TRANSITION WITH REBAR #3 @ 12" BOTH WAYS
7. BOND BEAM WITH (4) #3 CONT. REBAR & #3 TIES AT 18" O.C.
8. 1/8" TOOLED JOINT BOTH SIDES
9. COPING - REFER TO MATERIALS PLAN FOR TYPE & LOCATION
10. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE THAT THE POTENTIAL VERTICAL RISE (PVR) SHOULD NOT EXCEED 1-1/2"
11. SLOPE/GRADE OF BOND BEAM SURFACE TO BE CONSISTENT WITH SLOPE/GRADE OF ADJACENT TOP DECK

## 05 TYP. TRANSITION TO WALL

1/2" = 1'-0"

## 06 TYP. BANK TO WALL

1/2" = 1'-0"

## 07 TYP. BOND BEAM

1" = 1'-0"

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MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK DETAILS

ISSUE DATE: 10/11/2023

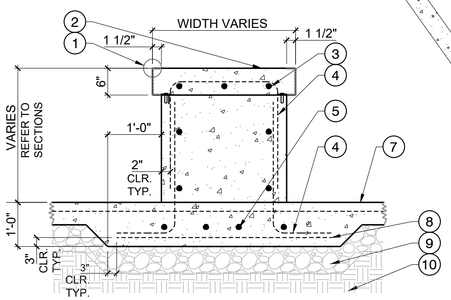
DRAWN BY: ASD

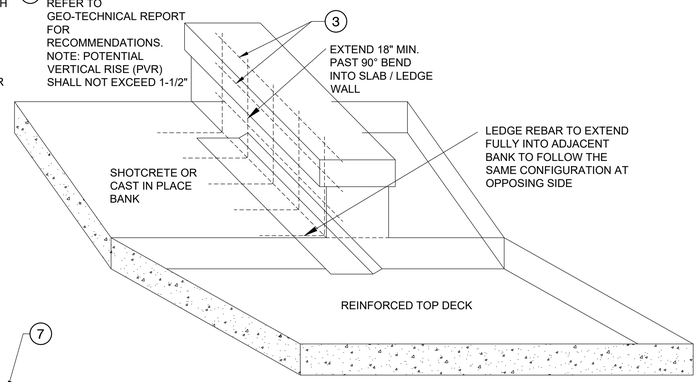
CHECKED BY: ASD

REVISIONS:
1 _____
2 _____
3 _____

SHEET NUMBER: SP5.02

1. C-CHANNEL EDGING WITH TABS AND EXPANSION ANCHORS, 04/SP5.04
2. STEEL TROWEL FINISH
3. #4 BARS @ 12" O.C. (TYP.) MIN. 3 BARS PER SIDE CONTINUOUS WITH 24" LAP SPLICE
4. #4 HOOK DOWELS SPACED PER @ 12" O.C.EXTEND 18" MIN. PAST 90° BEND INTO SLAB / LEDGE WALL
5. #4 BARS @ 12" O.C. HORIZONTAL CONTINUOUS WITH 24" LAP SPLICE
6. #4 @ 12" O.C. (TYP.) SUPPORT BARS
7. REINFORCED TOP DECK, REFER TO MATERIALS PLAN FOR TYPE & LOCATION.
8. 6" DENSE GRADED CRUSHED STONE
9. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

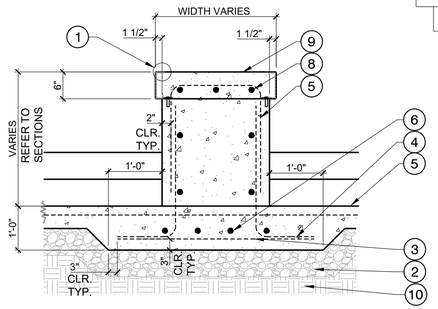


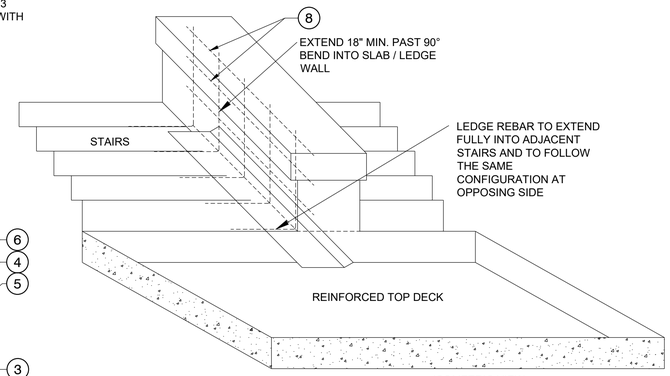




ISOMETRIC VIEW
FOR GRAPHIC PURPOSES ONLY
(NOT TO SCALE)

## 01 LEDGE WITH 6" CAP ON THICKENED DECK/BANK
3/4" = 1'-0"

1. C-CHANNEL EDGING WITH TABS AND EXPANSION ANCHORS, 04/SP5.04
2. 6" DENSE GRADED CRUSHED STONE
3. #4 @ 12" O.C. (TYP.) SUPPORT BARS
4. #4 HOOK DOWELS SPACED @ 12" O.C. EXTEND 18" MIN. PAST 90° BEND INTO SLAB / LEDGE WALL
5. REINFORCED TOP DECK
6. #4 BARS @ 12" CONTINUOUS WITH 24" LAP SPLICE
7. #4 BARS @ 12" O.C. (TYP.) MIN. 3 BARS PER SIDE CONTINUOUS WITH 24" LAP SPLICE
8. STEEL TROWEL FINISH
9. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

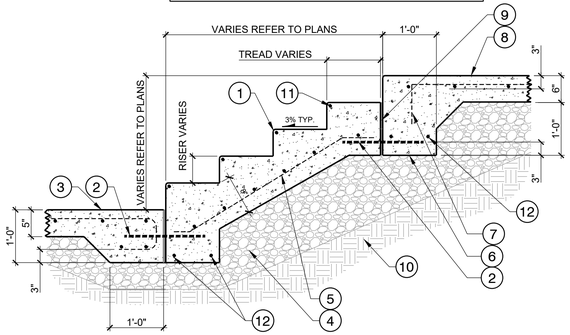


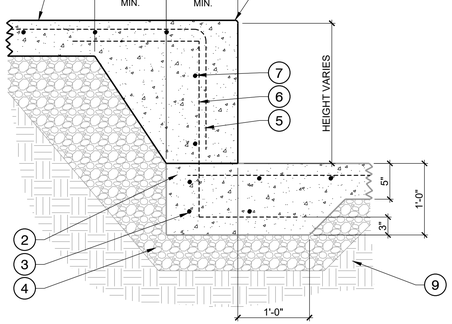

ISOMETRIC VIEW
FOR GRAPHIC PURPOSES ONLY
(NOT TO SCALE)

## 02 LEDGE WITH 6" CAP ON THICKENED STAIRS
3/4" = 1'-0"

NOTE:
1. REFER TO PLAN FOR STEP LOCATION.
2. CONTRACTOR TO ADJUST TOP AND BOTTOM TREAD, AND NUMBER OF RISERS AS PER PLAN.
3. ONLY TREADS TO RECEIVE A LIGHT BROOM FINISH.



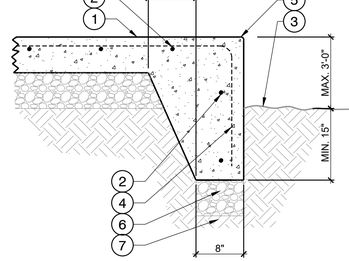

1. TREAD, WITH 1/2" TOOLED RADIUS NOSE AND REBAR CONT.
2. #4 X 18" SMOOTH DOWEL WITH PLASTIC SLEEVE ON ONE END @ 2'-0" O.C.,TYP.
3. REINFORCED TOP DECK (FIRST POUR)
4. 6" DENSE GRADED CRUSHED STONE
5. REBAR #4 @ 12" O.C. BOTH WAYS
6. TURNDOWN WALL, SEE 04/SP5.03
7. REBAR #3 CONT.
8. REINFORCED TOP DECK
9. 1/2" EXPANSION JOINT, TYP.
10. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"
11. #4 REBAR AT NOSE OF STAIRS, TYP.
12. (2) #4 REBAR CONT.




1. REINFORCED TOP DECK (SECOND POUR)
2. REINFORCED THICKENED TOP DECK (FIRST POUR)
3. 2-#4 CONT. AT BOTTOM
4. 6" DENSE GRADED CRUSHED STONE.
5. REBAR PER BAR CHART BELOW
6. REBAR #4 @ 12" O.C. BOTH WAYS
7. REBAR TOP & BOTTOM
8. 1/2" RAD. TOOLED EDGE
9. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE THAT THE POTENTIAL VERTICAL RISE (PVR) SHOULD NOT EXCEED 1-1/2".

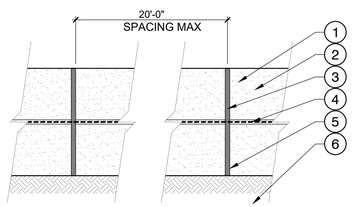
BAR CHART

| HEIGHT | BAR CONFIGURATION |
|---|---|
| UP TO 24" | #4 1'-6" / 1'-6" @ 12" O.C. |
| 24" TO 4'-6" | #4 1'-3" / 1'-3" @ 12" O.C. |




1. REINFORCED TOP DECK
2. (2)#4 CONT. TOP & BOTTOM CONTINUOUS WITH 24" LAP SPLICE
3. FINISH GRADE OR TOP OF ASPHALT PAVEMENT
4. 1'-3" VARIES #4 REBAR 12" O.C. TYP.
5. 1/2" RAD. TOOLED EDGE
6. 6" DENSE GRADED CRUSHED STONE.
7. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE THAT THE POTENTIAL VERTICAL RISE (PVR) SHOULD NOT EXCEED 1-1/2".

## 03 TYP. CONCRETE STAIRS
3/4" = 1'-0"




1. 1-PART (NON-SAG) POLYURETHANE CAULKING COLOR - TAN
2. CONCRETE RETAINING WALL
3. 1/2" EXPANSION JOINT W/ SEALER, BOTH SIDES, TYP.
4. 1/2" X 18" SPEED DOWEL W/ SLEEVE @ 12" O.C., TYP.
5. JOINT TO TOP OF SPREAD FOOTING
6. SPREAD FOOTING IF APPLICABLE

## 04 TURNDOWN WALL ADJ. TO DECK
1" = 1'-0"

## 05 TURNDOWN WALL ADJ. TO GRADE
1" = 1'-0"

## 06 TURNDOWN WALL EXPANSION JOINT & WATERPROOFING
1 1/2" = 1'-0"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MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK DETAILS

ISSUE DATE: 10/11/2023

DRAWN BY: ASD

CHECKED BY: ASD

REVISIONS:
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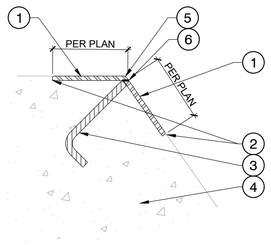
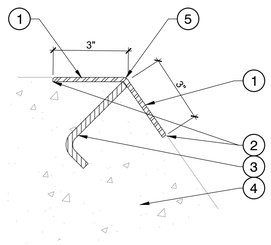
3 _____

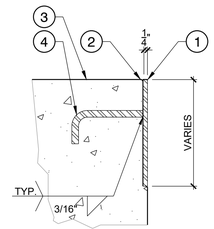
SHEET NUMBER: SP5.03




1. 1/4" THK. FABRICATED PLATE, BANK ANGLE VARIES. REFER TO SECTIONS
2. 1/8" TOOLED JOINT - CONTINUOUS ALONG TOP & BOTTOM OF COPING, FILL WITH POLYURETHANE ELASTOMERIC SEALANT, TYP.
3. 4" X 3/8" MIN. HOOK ANCHOR OR NELSON STUD @ 12" O.C.
4. SHOTCRETE BANK/ TRANSITION/ LEDGE
5. 1/8" ROUTED RADIUS
6. WELD PLATES AT SEAM DIRECTLY BENEATH TOP PLATE




1. 6" x 1/4" THK. BENT PLATE, BANK ANGLE VARIES. REFER TO SECTIONS
2. 1/8" TOOLED JOINT - CONTINUOUS ALONG TOP & BOTTOM OF COPING, FILL WITH POLYURETHANE ELASTOMERIC SEALANT, TYP.
3. 4" X 3/8" MIN. HOOK ANCHOR OR NELSON STUD @ 12" O.C.
4. SHOTCRETE BANK/ TRANSITION/ LEDGE
5. RADIUS VARIES - $\frac{1}{8}$" MIN.



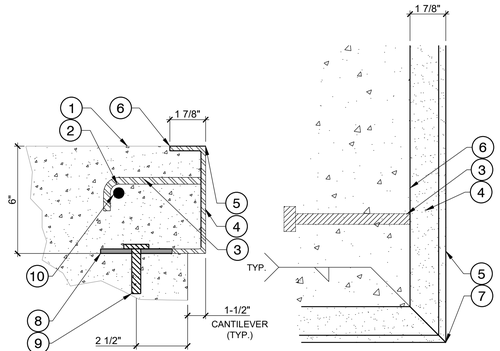

1. 1/4" THK. CUSTOM CUT STEEL PLATE WELDED TO C-CHANNELS AT STAIR RISERS
2. 1/ 8" TOOLED JOINT, CONTINUOUS ALONG PLATE (TOP & BOTTOM) FILL WITH POLYURETHANE ELASTOMERIC SEALANT, TYP.
3. CONCRETE STEP / BANK
4. 4" X 3/8" MIN. ANCHOR BOLT OR NELSON STUD STAGGERED @ 6" O.C. WELDED TO PLATE

NOTES:

1. CUSTOM CUT STEEL PLATE TO FOLLOW PROFILE OF STAIRS / BANK.
2. STEEL PLATE TO BE MIN. 2" BELOW ADJACENT CONCRETE SURFACE.

## 01 FABRICATED ANGLED PLATE

3" = 1'-0"

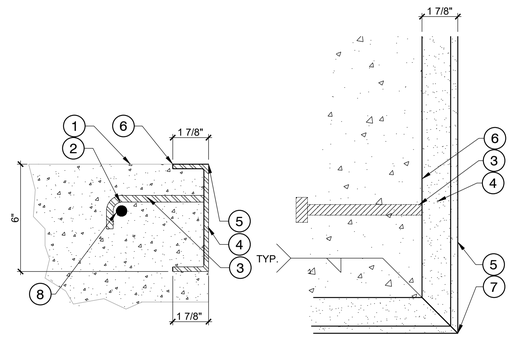



1. CONCRETE LEDGE
2. RADIUS 1/2"
3. 3" X 1/2" MIN. J HOOK OR NELSON STUD @ 16" O.C.
4. C6 X 8.2 STEEL CHANNEL
5. 1/8" ROUTED RADIUS
6. 1/ 8" TOOLED JOINT, CONTINUOUS ALONG PLATE
7. GRIND SMOOTH
8. 2" X 4" MOUNTING BRACKET / WELD TAB
9. 1/2" X 2 -1/2" EXPANSION ANCHOR @ 2' O..C.
10. #4 CONT.

NOTE:
TO ENSURE LEDGE CAP DOES NOT SAG, CRACK AND COLLAPSE, PROVIDE SUFFICIENT WOOD FORMS AND/OR BRACING TO HOLD LEDGE CAP IN PLACE.

## 02 BENT ANGLED PLATE

3" = 1'-0"




1. CONCRETE LEDGE
2. RADIUS 1/2"
3. 3" X 1/2" MIN. HOOK ANCHOR OR NELSON STUD @ 16" O.C.
4. C6 X 8.2 STEEL CHANNEL
5. 1/8" ROUTED RADIUS
6. 1/ 8" TOOLED JOINT, CONTINUOUS ALONG PLATE
7. GRIND SMOOTH
8. #4 CONT.

NOTE:

1. MATERIAL AND CONSTRUCTION METHOD IS ALSO APPLICABLE TO LEDGES WITHOUT CANTILEVERED CAPS.

## 03 CUSTOM CUT FLAT STEEL PLATE

3" = 1'-0"

| IMPERIAL | | | | | |
|---|---|---|---|---|---|
| ROUND | | SQUARE | | RECTANGULAR | |
| Nominal Size | Actual Size | Nominal Size | Actual Size | Nominal Size | Actual Size |
| 2" | HSS 2.375 x 0.1875 | 2" X 2" | HSS 2.000 x 2.000 x 0.1875 | 2" X 3" | HSS 2.000 x 3.000 x 0.1875 |
| 2-1/2" | HSS 2.875 x 0.1875 | 3" X 3" | HSS 3.000 x 3.000 x 0.1875 | 2" X 6" | HSS 2.000 x 6.000 x 0.1875 |
| 3" | HSS 3.500 x 0.1875 | 3-1/2" X 3-1/2" | HSS 3.500 x 3.400 x 0.1875 | 2" X 8" | HSS 2.000 x 8.000 x 0.1875 |
| 3-1/2" | HSS 4.000 x 0.1875 | 4" X 4" | HSS 4.000 x 4.000 x 0.1875 | 2-1/2" X 4" | HSS 2.500 x 4.000 x 0.1875 |
| 4" | HSS 4.500 x 0.1875 | | | 3" X 5" | HSS 3.000 x 5.000 x 0.1875 |

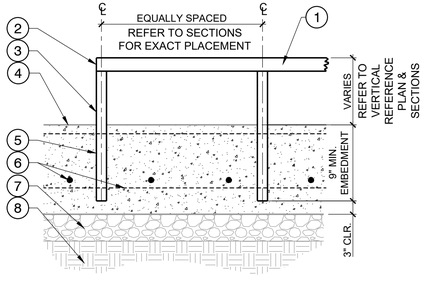
| METRIC | | | | | |
|---|---|---|---|---|---|
| ROUND | | SQUARE | | RECTANGULAR | |
| Nominal Size | Actual Size | Nominal Size | Actual Size | Nominal Size | Actual Size |
| 2" | 6.03cm x 4.76mm | 2" X 2" | 5.08cm x 5.08cm x 4.76mm | 2" X 3" | 5.08cm x 7.62cm x 4.76mm |
| 2-1/2" | 7.30cm x 4.76mm | 3" X 3" | 7.62cm x 7.62cm x 4.76mm | 2" X 6" | 5.08cm x 15.24cm x 4.76mm |
| 3" | 8.89cm x 4.76mm | 3-1/2" X 3-1/2" | 8.89cm x 8.89cm x 4.76mm | 2" X 8" | 5.08cm x 20.32cm x 4.76mm |
| 3-1/2" | 10.16cm x 4.76mm | 4" X 4" | 10.16cm x 10.16cm x 4.76mm | 2-1/2" X 4" | 6.35cm x 10.16cm x 4.76mm |
| 4" | 11.43cm x 4.76mm | | | 3" X 5" | 7.62cm x 12.70cm x 4.76mm |

NOTE:

1. ALL HOLLOW STRUCTURAL SECTIONS (HSS) TO BE ASTM A-500 GRADE

## 04 6" C-CHANNEL EDGING - CANTILEVERED CONDITIONS

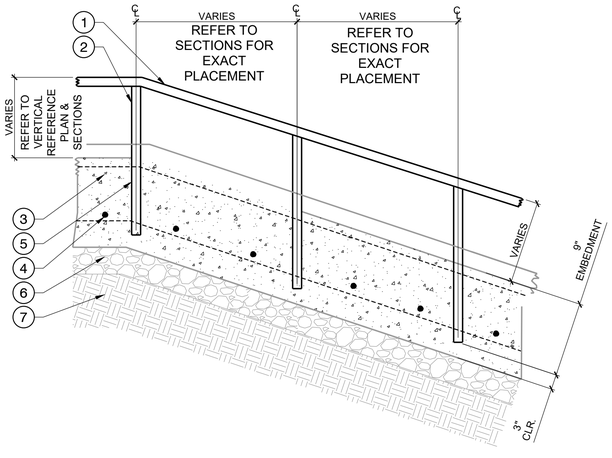
3" = 1'-0"




1. RAIL - REFER TO MATERIALS PLAN FOR TYPE & LOCATION
2. WELD END PLATE AT ENDS,GRIND SMOOTH
3. POST - REFER TO SKATE RAIL AND FOOTING DETAIL FOR TYPE
4. REINFORCED TOP DECK
5. REFER TO TYP. RAIL FOOTING DETAIL FOR REINFORCEMENT
6. #4 BARS AT 8" E.W. @ RAIL
7. 6" DENSE GRADED CRUSHED STONE
8. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

## 05 6" C-CHANNEL EDGING - STAIRS

3" = 1'-0"



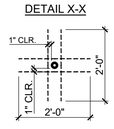

1. RAIL - REFER TO MATERIALS PLAN FOR TYPE & LOCATION
2. POST - REFER TO SKATE RAIL AND FOOTING DETAIL FOR TYPE
3. REINFORCED TOP DECK
4. #4 BARS AT 8" O.C.
5. REFER TO TYP. RAIL FOOTING DETAIL FOR REINFORCEMENT
6. 6" DENSE GRADED CRUSHED STONE
7. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

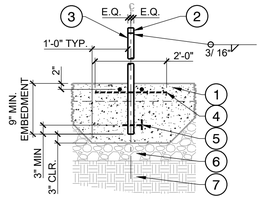
## 06 STEEL SHAPES CHART

N.T.S.

RAIL / POST CHART

| ROUND PIPE RAIL | |
|---|---|
| RAIL | POST |
| 2-3/8" O.D. ROUND | 2-3/8" O.D. ROUND |
| **VERTICAL FLAT RAIL** | |
| RAIL | POST |
| 2" X 6" SQUARE | 2" X 2" SQUARE |




1. REINFORCED TOP DECK WITH CONTINUOUS DECK REINFORCING
2. CONTINUOUS TOP RAIL, VARIES REFER TO SKATE PARK MATERIALS PLAN FOR TYPE & LOCATION, WELD END PLATE, GRIND SMOOTH
3. STEEL POST PER RAIL / POST CHART
4. POSTS TO BE SURROUNDED BY REINFORCEMENT, SEE DETAIL X-X
5. #3 x 4" REBAR, THROUGH OR WELDED TO POST
6. 6" DENSE GRADED CRUSHED STONE
7. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE: POTENTIAL VERTICAL RISE (PVR) SHALL NOT EXCEED 1-1/2"

NOTES:

1. USE RAIL/POST COMBINATIONS SHOWN UNLESS NOTED OTHERWISE.
2. GRIND WELDS SMOOTH.

## 07 FLAT STEEL RAIL

3/4" = 1'-0"

## 08 SLOPED STEEL RAIL

3/4" = 1'-0"

## 09 TYPICAL RAIL FOOTING

1/2" = 1'-0"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MICHAEL R. McINTYRE 688 9/30/07 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

PROJECT:
REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE:
SKATE PARK DETAILS

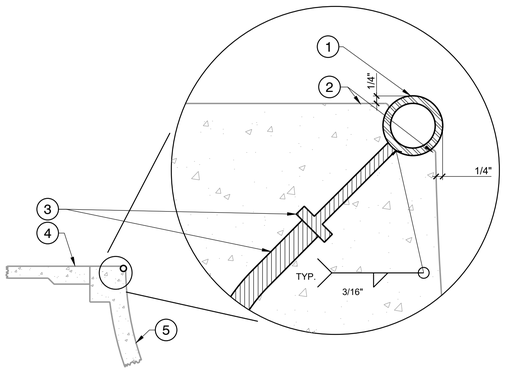
ISSUE DATE:
10/11/2023

DRAWN BY:
ASD

CHECKED BY:
ASD

REVISIONS:
1
2
3

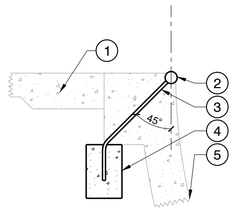
SHEET NUMBER:
SP5.04




1. COPING - REFER TO MATERIALS PLAN FOR TYPE & LOCATION.
2. 1/4" TOOLED JOINT - CONTINUOUS ALONG TOP & BOTTOM OF COPING, FILL WITH POLYURETHANE ELASTOMERIC SEALANT, TYP.
3. COPING SUPPORT, SEE 02/SP5.04
4. REINFORCED TOP DECK
5. SHOTCRETE WALL

NOTE:
1. SEE 03/SP5.04 FOR END CAP DETAIL.
2. WELD & GRIND SMOOTH END CAPS WHERE PIPE ENDS ARE EXPOSED. NO OPEN PIPES, OR CONCRETE FILLED CAPS WILL BE ACCEPTED.

1. REINFORCED TOP DECK
2. COPING - REFER TO MATERIALS PLAN FOR TYPE & LOCATION. FOR CONNECTION SEE "STEEL PIPE COPING" DETAIL
3. #4 REBAR SUPPORT, WELDED TO THE LOWER BACK SIDE OF THE COPING
4. 6" DIA. X 8" CONCRETE FOOTING
5. SHOTCRETE WALL
6. PLACE COPING CONSTRUCTION SUPPORT @ 4'-0"' O.C. MIN. ALONG COPING

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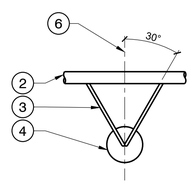
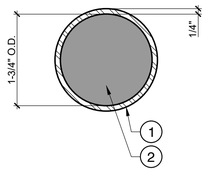



PLAN

**(B) CONCRETE FOOTING**

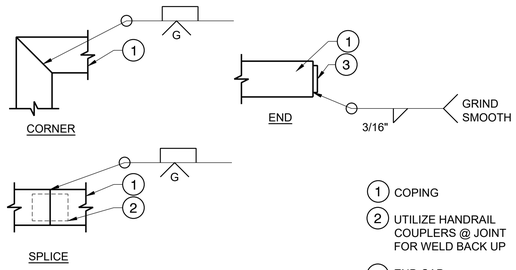



1. ROUND COPING, SEE 01/SP5.05.
2. 1-3/4" O.D. x 1/4" THK. END CAP

NOTES:

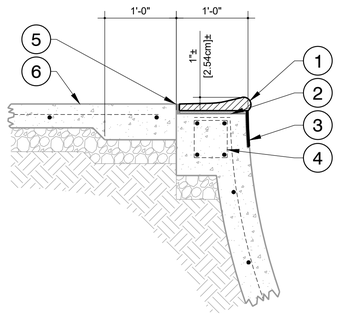
1. METAL FABRICATOR TO FURNISH SMOOTH END CAPS WHERE PIPE ENDS ARE EXPOSED. NO OPEN PIPES OR CONCRETE FILLED CAPS WILL BE ACCEPTED.
2. METAL FABRICATOR TO CUT CAPS SMALLER THAN ROUND COPING INSIDE DIAMETER (I.D.) TO ALLOW FOR WELDING BEAD SPACE.
3. METAL FABRICATOR TO GALVANIZE FLAT STEEL PLATE, THEN PRE-CUT CIRCLES.
4. METAL FABRICATOR SHALL NOT SHOP WELD END CAPS INTO THE PIPE ENDS.
5. SKATE PARK CONTRACTOR TO WELD END CAPS INTO PIPE ENDS IN THE FIELD UPON INSTALLATION.

## 01 TYP. ROUND COPING
1/2" = 1'-0"




1. COPING
2. UTILIZE HANDRAIL COUPLERS @ JOINT FOR WELD BACK UP
3. END CAP

## 02 COPING SUPPORT
1" = 1'-0"

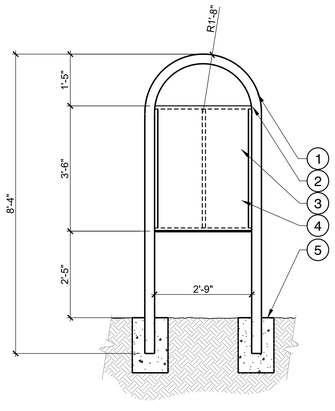



1. TEDDER STONE STANDARD BULLNOSE COPING OR APPROVED EQUIVALENT
2. APPLY 1/4" BED OF PATCHCRETE ACRYLIC POLYMER UNDERLAYMENT BONDING MATERIAL TO TOP OF BOND BEAM. APPLY 1/4" BED OF SPEC MIX ON THE BOTTOM OF COPING BLOCK.
3. POOL TILES (1"X1"X1/4"). SET TILE IN MORTAR, ALIGN TILE FLUSH WITH SHOTCRETE SURFACE. BLEND THIN SET MORTAR WITH LIQUID POLYMER ADMIXTURE.
4. BOND BEAM, 07/SP5.02
5. EXPANSION JOINT
6. REINFORCED TOP DECK

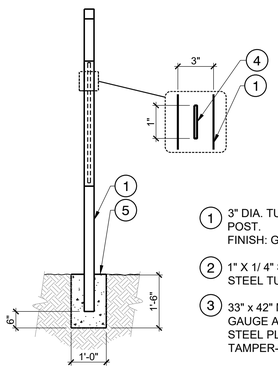
NOTES:
1. COPING TO OVERHANG FINISHED WALL 3/8".
2. COPING SHALL BE MINIMUM OF 6,000 PSI AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

## 03 COPING END CAP
3" = 1'-0"

## 04 TYP. COPING JOINTS
NOT TO SCALE




FRONT ELEVATION

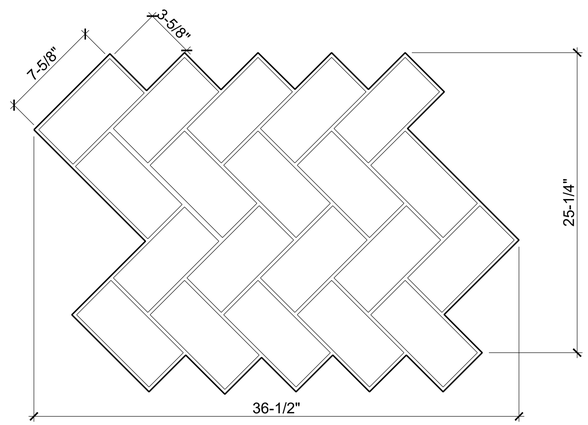



SIDE ELEVATION

1. 3" DIA. TUBULAR STEEL POST. FINISH: GALVANIZED
2. 1" X 1/ 4" STEEL, WELD TO STEEL TUBE
3. 33" x 42" METAL SIGN IN .080 GAUGE ANCHORED ON STEEL PLATE WITH TAMPER-PROOF BOLTS.
4. 1" X 1/4" STEEL, WELD TO STEEL TUBE.
5. CONCRETE FOOTING

NOTE:
SIGNAGE TEXT AND GRAPHICS TO BE PROVIDED BY OWNER

## 05 POOL COPING
1" = 1'-0"




NOTES:

1. PATTERN IS FORMED BY COMMON BRICK MASONRY UNITS LAID AT RIGHT ANGLES TO EACH OTHER. INSIDE JOINTS TO HAVE APPEARANCE OF RAKED, ROUGH, SANDY GROUTED JOINT, 3/8" WIDE X 1/8" DEEP. TOOL EDGES HAVE AN OUTSIDE JOINT, 3/8" WIDE ON SELECTED SIDES, AND MATCH THE INSIDE JOINTS WHEN TOOLS ARE JOINED.
2. SURFACE TEXTURE IS THAT OF NEW, UNUSED BRICK, EDGES ARE STRAIGHT, CORNERS ARE SQUARE. STAMPED OR STENCILED PATTERN TO HAVE A SMOOTH FINISH, FREE OF VOIDS AND AIR POCKETS.
3. THIS PATTERN IS MEANT FOR REFERENCE ONLY.
4. CONTRACTOR TO FOLLOW PROFESSIONAL STANDARDS AND PRACTICES, INCLUDING THOSE PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE (ACI).
5. CONTRACTOR TO SUBMIT STENCIL PRODUCT TO BE USED DURING INSTALLATION DURING SHOP DRAWING PHASE. SKATEPARK DESIGNER MUST APPROVE STENCIL BEFORE USE.

## 06 SKATE PARK RULES / ENTRY SIGN
NOT TO SCALE

## 07 BRICK STENCIL PATTERN - HERRINGBONE LAYOUT
NOT TO SCALE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PROJECT: REED PARK ALL WHEEL PARK
City of Fruita, CO

SHEET TITLE: SKATE PARK DETAILS

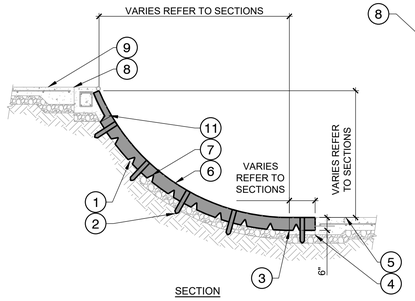
ISSUE DATE: 10/11/2023

DRAWN BY: ASD

CHECKED BY: ASD

REVISIONS:
1.
2.
3.

SHEET NUMBER: SP5.05

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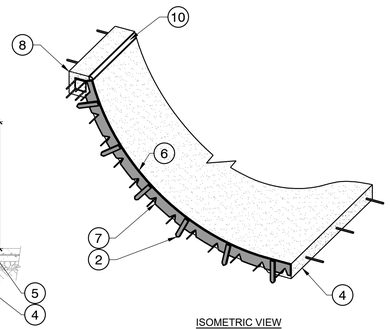
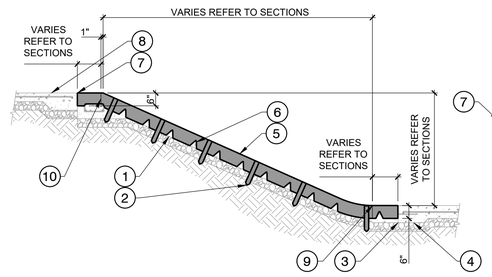


ISOMETRIC VIEW

1. REINFORCED TRANSITION BEYOND
2. 2" x 3/4" x 12" WOOD FORM STAKE, TYP.
3. POINT OF TANGENCY, DRAW A PERMANENT PLUMB LINE ON BOTH SIDES OF THE TEMPLATE TO INDICATE THE POINT OF TANGENCY
4. CONSTRUCTION JOINT AT FLATBOTTOM, END OF TEMPLATE SHALL LINE UP WITH THE CONSTRUCTION JOINT
5. REINFORCED FLAT BOTTOM
6. 3/4" x 6" PLYWOOD
7. "V" NOTCH FOR REBAR
8. CONSTRUCTION JOINT AT BOND BEAM, END OF TEMPLATE SHALL LINE UP WITH THE CONSTRUCTION JOINT
9. REINFORCED TOP DECK
10. COPING - REFER TO MATERIALS PLAN FOR TYPE & LOCATION. FOR CONNECTION SEE "STEEL PIPE COPING" DETAIL
11. POINT OF INTERSECTION, DRAW A PERMANENT PLUMB LINE ON BOTH SIDES OF THE TEMPLATE TO INDICATE THE POINT OF INTERSECTION

## 01 TRANSITION STOP FORM

N.T.S.

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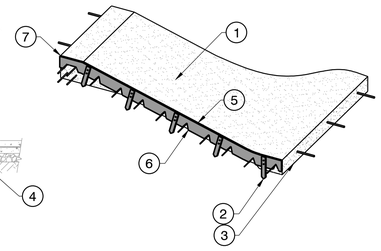
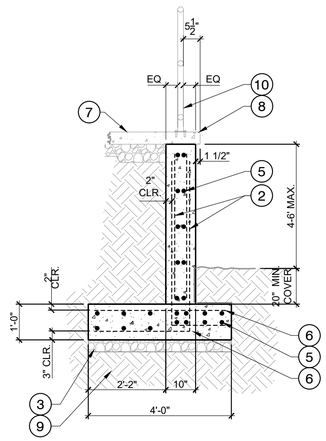


ISOMETRIC VIEW

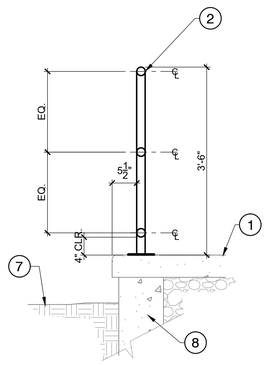
1. REINFORCED BANK BEYOND
2. 2" x 3/4" x 12" WOOD FORM STAKE, TYP.
3. CONSTRUCTION JOINT AT FLATBOTTOM, END OF TEMPLATE SHALL LINE UP WITH THE CONSTRUCTION JOINT
4. REINFORCED FLAT BOTTOM
5. 3/4" x 6" PLYWOOD
6. "V" NOTCH FOR REBAR
7. CONSTRUCTION JOINT AT BOND BEAM, END OF TEMPLATE SHALL LINE UP WITH THE CONSTRUCTION JOINT
8. REINFORCED TOP DECK
9. POINT OF TANGENCY, DRAW A PERMANENT PLUMB LINE ON BOTH SIDES OF THE TEMPLATE TO INDICATE THE POINT OF TANGENCY
10. POINT OF INTERSECTION, DRAW A PERMANENT PLUMB LINE ON BOTH SIDES OF THE TEMPLATE TO INDICATE THE POINT OF INTERSECTION

## 02 BANK STOP FORM

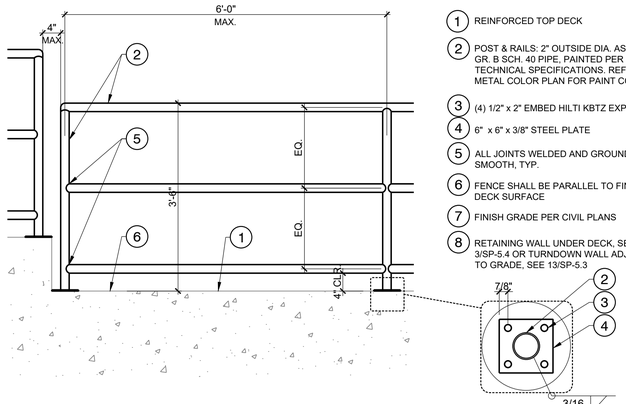
N.T.S.




1. WATERPROOFING -ASPHALTIC EMULSION, BACK OF WALL AND BELOW GRADE
2. #4 DOWELS @ 18" CONT.
3. 6" DENSE GRADED CRUSHED STONE
4. 1'-0" HOOK, TYP.
5. #4 REBAR @ 18" O.C. HORIZONTAL
6. #4 REBAR @ 18" O.C.
8. #5 REBAR @ 12"
7. REINFORCED TOP DECK
8. 1/2" RAD. TOOLED EDGE
9. COMPACTED SUBGRADE- REFER TO SPECIFICATIONS
10. 42" HIGH SAFETY GUARDRAIL POST, SEE 04/SP-5.4




TYPICAL SECTION

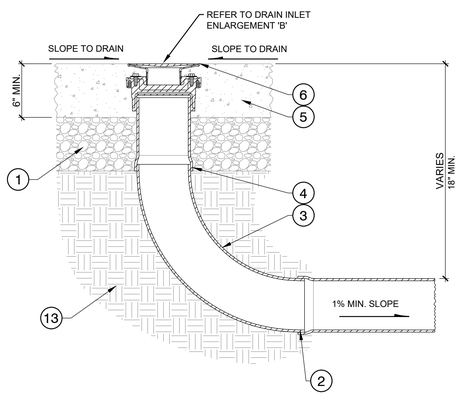


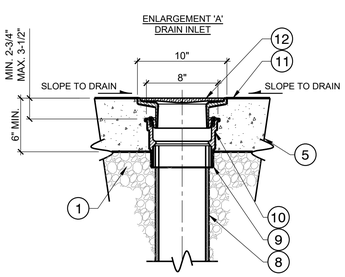

TYPICAL ELEVATION

1. REINFORCED TOP DECK
2. POST & RAILS: 2" OUTSIDE DIA. ASTM 53 GR. B SCH. 40 PIPE, PAINTED PER TECHNICAL SPECIFICATIONS. REFER TO METAL COLOR PLAN FOR PAINT COLOR.
3. (4) 1/2" x 2" EMBED HILTI KBTZ EXPANSION ANCHOR
4. 6" x 6" x 3/8" STEEL PLATE
5. ALL JOINTS WELDED AND GROUND SMOOTH, TYP.
6. FENCE SHALL BE PARALLEL TO FINISHED DECK SURFACE
7. FINISH GRADE PER CIVIL PLANS
8. RETAINING WALL UNDER DECK, SEE 3/SP-5.4 OR TURNDOWN WALL ADJACENT TO GRADE, SEE 13/SP-5.3

## 03 RETAINING WALL UNDER DECK

1/2" = 1'-0"



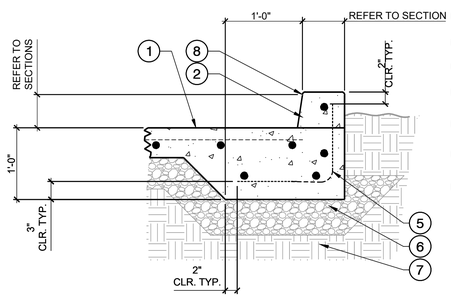

1. 6" DENSE GRADED CRUSHED STONE.
2. (IE) INVERT ELEVATION, AS SHOWN ON PLANS
3. LONG RADIUS ELBOW OR TEE AS REQUIRED, ONLY USE SHORT RADIUS ELBOWS FOR TIGHT CLEARANCES
4. 6" SDR-35 DRAINLINE.
5. REINFORCED FLATBOTTOM. INSTALL REINFORCEMENT AROUND DRAIN INLET.
6. (RE) RIM ELEVATION, AS SHOWN ON PLANS
7. OMIT
8. 6" PVC, SDR-35 DRAIN LINE.
9. SLP X#THRD ADAPTER (PER MANUFACTURER)
10. WATTS FD-100-A FLOOR DRAIN WITH CAST IRON BODY, ANCHOR FLANGE, BOTTOM OUTLET & ADJUSTABLE ROUND NICKEL BRONZE STRAINER, OR APPROVED EQUAL.
11. CONCRETE FLATBOTTOM SLAB.
12. POLISHED NICKEL BRONZE STRAINER
13. COMPACTED SUBGRADE- REFER TO GEO-TECHNICAL REPORT FOR RECOMMENDATIONS. NOTE THAT THE POTENTIAL VERTICAL RISE (PVR) SHOULD NOT EXCEED 1-1/2".

## 04 42" HIGH SKATE PARK SAFETY GUARDRAIL

3/4" = 1'-0"

## 05 DRAIN INLET DETAIL

1-1/2" = 1'-0"




1. REINFORCED TOP DECK / BANK
2. CAST IN PLACE CONCRETE CURB
3. FINISH GRADE PER CIVIL PLANS
4. #4 DOWEL AT 12" O.C. TYP.
5. (2) #4 CONT. @ TOP & BOTTOM
6. 6" DENSE GRADED CRUSHED STONE.
7. COMPACTED SUBGRADE- REFER TO SPECIFICATIONS
8. 1/4" TOOLED RADIUS

## 06 CURB TIED TO DECK

1-1/2" = 1'-0"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